THE PSYCHOLOGY OF ADJUSTMENT

An Objective Approach to Mental Hygiene

BY

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HOUGHTON MIFFLIN COMPANY

BOSTON · NEW YORK · CHICAGO · DALLAS

ATLANTA · SAN FRANCISCO

The Riverside Press Cambridge

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The Riverside Press
CAMBRIDGE · MASSACHUSETTS
PRINTED IN THE U.S.A.

TO
DOROTHY

EDITOR'S INTRODUCTION

MODERN objective physiological psychology is clearly part of the great structure of natural science. In the present volume Dr. Shaffer brings together many of the established facts of objective psychology and applies them to an understanding of the reactions of the real human individual to the real world.

The student well-trained in mathematics, physics, chemistry, biology, and scientific psychology is often rightly repelled by the books on personality, mental hygiene, clinical psychology, and abnormal psychology which he reads. He has been trained to respect measurement and the scientific method and he is given anecdotes and stories from mythology.

In this book, on the contrary, he will find the scientific method respected and the facts of science marshaled to give a new understanding of man's adjustment and maladjustment to his environment. Dr. Shaffer in his Preface modestly disclaims any wide originality for his book. This very fact in an author of a book dealing with human personality is itself original. It suggests that scientific psychology has come of age and that the author recognizes the fact.

In a most general sense this book deals with applied psychology. The problems which it treats are those which must be faced by the lawyer, the teacher, the physician, the salesman, and the parent. This book will thus be valuable in any general study of psychology which is intended to survey the whole field of mental life with a view to providing those aids which scientific psychology can offer in the general business of living.

LEONARD CARMICHAEL

PREFACE

MANY psychologists today agree that the most vital and significant part of their field is that which deals with the common individual and social adjustment problems of normal people. The scientific study of these adjustments, usually designated as mental hygiene, offers an application of psychology that has a universal appeal. Everyone has to live and to adjust, while only limited numbers of persons can profit from the various other applications of psychology, such as those relating specifically to teaching, law, or business. Every person expects psychology to contribute to an understanding of his own life problems, and the study of mental hygiene supplies this demand more directly than does any other department of the science.

The author has endeavored to approach these problems of human adjustment from the viewpoint of objective psychology. It has not been necessary to invent any unique concepts or to use any hypotheses unfamiliar to general and experimental psychology. Some phenomena, such as that of repression, are peculiar to the study of the psychology of adjustment, but these have been explained in an objective and psychological manner. Especial care has been taken to avoid the use of psychoanalytical conceptions, either explicitly or implicitly. The hypotheses of "the unconscious" and of "complexes" may have been of some temporary service in the past, but the author feels that they are no longer useful. Objective psychology is now prepared to attack the problems of human adjustment without the assistance of these doubtful assumptions. Because of their historical importance, the principal theories of psychoanalysis are presented rather fully in a separate chapter.

Only a few fragments of the objective theories here presented can be claimed as original. Such originality as does exist comes from the assimilation and recombination of the

work of many other persons. As the determiners of his psychological point of view, the author feels most indebted to English Bagby, William H. Burnham, Gilbert V. Hamilton, Harry L. Hollingworth, Edwin B. Holt, John J. B. Morgan, Edward L. Thorndike, John B. Watson and Robert S. Woodworth. To these contributors are due thanks for their legacy, but they are not to be held responsible for the way it is expended.

Many colleges and universities have offered courses of instruction in the fundamentals of human adjustment, usually under titles such as "Mental Hygiene," "Mental Adjustments" or "The Psychology of Personality." This volume is designed primarily to serve as a textbook for these subjects. It has also been suggested to the author that *The Psychology of Adjustment* is an appropriate text for a second year or second semester of general psychology following the usual introductory course. Since its subject matter appeals to a wide range of psychological interests, the book seems suitable for this purpose. In some schools, instruction in mental hygiene is included in Abnormal Psychology. The present text contains much of the really psychological material of that subject and may be used in conjunction with some other book which stresses the more serious and organic forms of mental disorder. While the study of human adjustments is of interest to all persons, students of education, social work and personnel management will find the subject especially profitable.

There has been no attempt to make this book simple and easy. Oversimplification and disregard for fundamental theories have been serious faults of several otherwise valuable books in mental hygiene. This text is no less difficult, and no more so, than the more comprehensive recent books in general or educational psychology. Mental hygiene must be recognized as a serious subject, not to be mastered in a few hours of casual reading. Students who are capable of understanding other systematic courses in psychology should have no trouble with the presentation given here, but they are prevented from considering it lightly.

Most of the first part of the volume deals with general psychological issues pertinent to the study of human adjustments. The author feels that this consideration of fundamentals is essential, for without it the discussion of the adjustments themselves is likely to become hazy or misleading. The stress placed on the first five chapters may be governed by the recency and intensity of the student's preparation in general psychology, but too much cannot be taken for granted. The psychology of human adjustments requires new emphasis and deeper exploration in some quite commonplace psychological topics.

The aim of this book has been to assist its readers to understand human nature, rather than to qualify them as practitioners of mental hygiene. The skill of a practitioner in any field comes not only from a knowledge of theories, but also from direct experience in dealing with problems. The consulting psychologist, visiting teacher and social worker require both wide theoretical training and first-hand practical experience. The present book hopes to assist in the attainment of the former of these qualifications; no book can claim to supply the latter one.

The Psychology of Adjustment has been tried in a preliminary edition for two years. The author believes that it is teachable and adapted to the abilities and needs of college students. At the end of each chapter are given a few suggested readings, chiefly from books that are likely to be available. All references to books or articles mentioned in the text are distinguished by author and date. The full citation in each instance can be found in the complete bibliography at the end of the volume. A number of questions and exercises designed to assist study and to stimulate thought and discussion are also included at the end of the book.

Many valuable suggestions and criticisms have been made by my friend and colleague, Professor Max Schoen. Professor William T. Root of the University of Pittsburgh, and Dr. George J. Mohr and Dr. Harry M. Little, Directors of the Pittsburgh Child Guidance Center, have also given much

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appreciated assistance. Especially helpful has been the critical reading of the manuscript by Dr. Leonard Carmichael, the editor of this series. I am very grateful to the authors and publishers who have given their permissions to quote passages. These quotations are specifically acknowledged in the text.

LAURANCE F. SHAFFER

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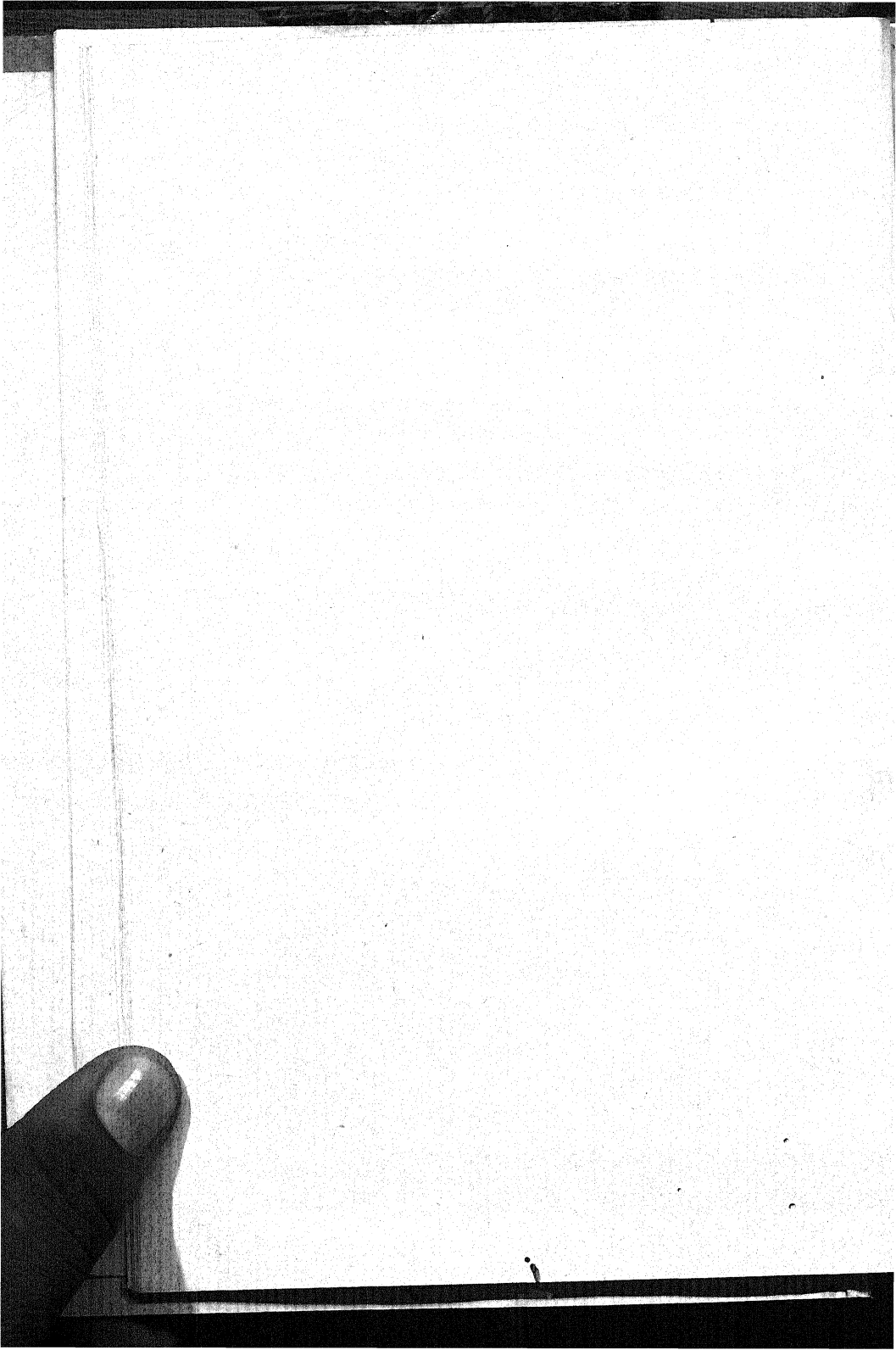
Part I
PSYCHOLOGICAL FOUNDATIONS



CHAPTER I

HUMAN CONDUCT AND SCIENTIFIC METHOD

PROBLEMS OF ADJUSTMENT

Living as Adjusting. One of the most basic generalizations of the biological sciences is that all living organisms tend to vary their activities in response to changed conditions in their environments. An animal's organic needs must be fulfilled by behavior that is effectively adapted to its opportunities. When external circumstances change, the animal must modify his behavior and discover new ways of satisfying his wants. This may be accomplished by new forms of response, by changing the environment, or in some exceptional cases by the modification of the organic needs themselves. This fundamental pattern of behavior is the adjustment process. As long as an animal continues to adjust and to modify its responses it continues to live. If it fails to adjust in some degree, its existence is imperiled. When an animal ceases entirely to adjust, it is dead.

The adjustments of organisms to their physiological needs illustrate the nature of adaptive behavior in its simplest form. The hungry dog may find food immediately available and be able to restore his inner equilibrium at once. If food is not present, the dog displays various activities that have previously brought about adjustment. He looks in accustomed places, whines, or seeks a person who has fed him in the past. These devices failing, the animal is stimulated to further activity by his organic state and runs about and explores until some discovery of food reduces his drive, making him again at peace with his environment. Adjustments to changes of temperature illustrate another simple adaptive pattern. If too hot, an individual is stirred to move until a cooler spot is found. When the situation is too cold for optimum organic operation, he moves to a warmer one. The inability to adjust to such simple organic

annoyances is the proverbial limit of human ineptitude. "He doesn't know enough to come in out of the rain."

A broader meaning of the adjustment process is illustrated by the individual's relationships to his social environment. Not only must a person modify his behavior in response to his inner needs and the natural events of his surroundings, but he must also adapt to the presence and activities of his fellow men. A man who is ignored by a social group of which he wishes to be a member is placed in a situation to which he must adjust in some way. If a student fails a course, if a man is unsuccessful in his work, if a child feels insecure or unwanted in his home, adjustments are required to mediate between individual desires and the circumstances of the social milieu.

Examples of Human Adjustments. Adjustments vary in nature and in quality. Some persons successfully adapt themselves to their surroundings, others acquire unfortunate habits of conduct which hinder rather than aid the eventual satisfactory solution of their difficulties. Each autumn thousands of freshmen arrive at the colleges and universities. In a new environment many adjustive problems confront them. Most of these students adjust satisfactorily. They find new friends, cultivate new interests and participate in new activities that serve as outlets to their needs and drives. Other freshmen fare less well. Some become seclusive and shun the situations that compel them to adjust. A few will become homesick, seeking the satisfactions that have been hitherto cherished instead of acquiring new ones. A number will adjust by showing off or by becoming eccentric, gaining in this way a certain notice and distinction that they fail to attain in more usual channels. These variations in adjustive ability are not accidental or uncaused. There are reasons underlying all types of adjustment, whether the end result is satisfying or not, whether the behavior shown is social or antisocial. The scientific study of the origin and development of individually and socially adaptive behavior constitutes the subject matter of the psychology of adjustment.

A number of illustrations of difficulties of adjustment, drawn largely from the experiences of college students, will help to

clarify the concepts involved in the study of human conduct problems.

1. Here is a young woman who comes mournfully to the instructor's office to discuss a low grade that she has received in a course. She is worried and distressed about it. She reports that she lies awake at night thinking about her difficulty. In the midst of the interview she bursts into tears. On further questioning it is revealed that her general scholastic standing is about average and that she is not in any danger of a serious consequence such as being dropped from school. The sole superficially apparent cause of the outbreak is a grade of D on one short quiz. This girl's behavior is quite evidently unadaptive. Instead of increasing application, seeking to better her methods of study or making any one of a large number of adequate adjustments that she might make to the situation, she worries, breaks down, and cries. What are the antecedents of this unfortunate and unusual reaction? How can she be guided into making better adjustments in the future? These are some of the problems that the psychology of adjustment seeks to solve.

2. A young college teacher is excessively overconscientious. He works day and night at his academic duties, frequently grading papers or preparing lectures until three in the morning. Though he was graduated with highest honors from an eminent university, he constantly fears lest he fall down on the job of teaching. He prepares his lectures three or four times over to be sure that he will make no errors. He assigns daily preparation work to his hundred students and grades each paper with meticulous care. Apparently as a result of this absorption in his duties, he has little time for social activities. He is seclusive and not friendly, as well as run down physically. He is making a comparatively inadequate adjustment to his problems of living.

3. A certain college freshman shows little inclination to effort either in work or recreation. While his abilities are adequate, his grades are poor. After classes he prefers to sit in his room rather than to engage in athletics or other college activities. He

reads romantic fiction in considerable amount, he is unusually fond of the movies, but much of his time is spent sitting without apparent occupation — daydreaming. He is getting satisfaction from this, but his social adjustments are very inadequate indeed.

4. A senior girl has participated in nearly every activity on the campus but has never been elected to an editorship, managership or office. This is not because of lack of ability. She could write a very acceptable story as a reporter on the college paper, and was indefatigable in working as a candidate for managership of the rifle team. The trouble is that this girl has always had an air of snobbish superiority. As a freshman she pointed out to the editor the principal errors and shortcomings of the student newspaper. She cannot co-operate with other students, has a know-it-all attitude and an overaggressive manner. Now, as a disappointed senior, she blames politics for her lack of success, and points out to all listeners how petty college activities really are. She does not seem to recognize that she failed because of her personality traits, which were inadequate habits of adjustment.

5. A young college graduate had eighteen different positions in a period of three years, during a time of general economic prosperity. With his attractive personal appearance and reasonably nimble intelligence he secured positions easily. Each in turn seemed uninteresting and futile after a short trial. Some jobs he lost because of evident decrease of effort. Others he gave up voluntarily because they were not what he wanted. He lives at home, the youngest of several children, and is ably defended against implications of incompetence by his very efficient mother. So far, he has been a conspicuous failure at vocational adjustment.

6. A college girl reports that she has a fear of eyes. She admits that this is unreasonable, yet she cannot look anyone directly in the eyes without experiencing panic. She has terror daydreams of insane persons whose eyes she imagines to be horrible and staring. The phrase, "fear looking out of her eyes," runs through her thoughts. As a result of worry over

this condition, her social relationships and academic achievements are approaching ruin. Although this is a somewhat different problem from the others previously considered, it is a maladjusting mental state and will warrant careful psychological investigation.

Attitudes Toward Adjustment Problems. Inadequate adjustments of the kinds described have undoubtedly been made as long as the race of mankind has had to face problems of living. Up to the present century the prevailing attitude toward adjustive difficulties has been a *moralistic* one. In primitive civilizations individuals who are different in their social adjustments are often considered as possessed by demons. In the course of the evolution of theological concepts, this notion has been modified into a prevalent popular belief of today, that the maladjusted are sinners who suffer from the effect of wrongdoing or who are lacking in desirable spiritual graces. Many unfortunate individuals believe, because of training that has engendered an unenlightened theological attitude, that their difficulties are sins or the result of sins. A secondary state of worry is thereby created that further impedes the solution of their troubles. The sin-conscious attitude is especially common and harmful in adolescents' adjustive struggles, particularly in those dealing with parental control and with sex.

Even in quarters where a primitive theological interpretation has been abandoned, an equivalent moralistic attitude exists that is equally detrimental to the welfare of those experiencing difficulties of adjustment. The gist of this attitude is that the unsuccessful or unusual person is by deliberation or folly departing from expected standards of conduct. The overaggressive or conceited individual is dismissed as queer or is treated with reprimands or deprivations. The daydreaming boy is described as lazy and is lectured and punished. The fearful girl is told to "snap out of it" and that her difficulties are "only her imagination." Parents, classmates and even teachers often augment the troubles of the unadjusted by subjecting them to social ridicule. The moralistic attitude convinces the sufferer that he is inferior or blameworthy and provides further diffi-

culties to which he must adjust. This point of view is well illustrated by the attitude of an executive who refused the services of a psychiatrist in his establishment, saying that if any of his men were maladjusted all they had to do was to use their common sense and straighten themselves out! The executive believed that if a man were sane the use of "reason" and "will power" was all that was needed; if he were not sane he should be placed in an institution.

Lecturing, punishment and even reassurance have, however, proved to be notably ineffective ways of dealing with adjustment problems. The worrier is not cured by being told that he should not worry. The shiftless individual is aided very little by preaching or retribution. What is needed for the successful treatment of these persons is a scientific understanding of human nature.

In sharp contrast to the moralistic viewpoint, the *objective or psychological attitude* places no blame or judgment upon the individual. Human behavior is the result of causes, just as physical phenomena arise inevitably from certain sufficient antecedents. Not many centuries ago material events such as earthquakes and thunderstorms were blamed on the wrath of the deity and on the "perversity of nature." Conduct problems have only recently emerged into the realm of natural occurrences, to be treated as impartially as are physical events. As a scientist, the psychologist seeks to discover the uniformities underlying the course of human behavior, and so to determine the nature and antecedents of both normal and unusual conduct. The psychological practitioner, psychiatrist or psychologist, endeavors to effect cures of personal difficulties on the basis of the general principles discovered. The practitioner's point of view is necessarily personal and intimate, and attentive to the immediate welfare of his patient. The scientist is impersonal and remote and more concerned with the exactness of data and the validity of conclusions. Scientist and practitioner hold in common the impartial and mechanistic point of view necessary for progress both in the study and in the treatment of conduct problems.

SCIENTIFIC METHOD

Science in General. All of the realms of science, whether physics, biology or psychology, are characterized by one common factor, the scientific method of inquiry. Science is not a body of knowledge, not a technology of apparatus, machines, or laboratories, not a particular kind of subject matter. It is a method of investigation. To the extent that a generalization or conclusion is based on this universal method, it is scientific, regardless of its subject matter. The scientist who investigates psychological problems uses essentially the same method as one who investigates physical problems. Their common method is best understood as a series of steps, which can be illustrated from any one of the scientific fields.

It is commonly and widely observed, for example, that when a gas is heated, without its volume being allowed to increase, its pressure will rise. Now the physicist will collect data concerning this phenomenon in the most exact manner possible. He will tabulate the temperatures and pressures concurrently observed, and will repeat the experiment with various gases and under various conditions. From the data he will draw a generalization or hypothesis, that with volume constant, the pressure of a gas is directly proportional to the temperature. This generalization, or short formula, is now tested to see if it will hold in further observations. The crucial test is whether it will predict, whether an unknown pressure can be calculated from a knowledge of other conditions so that it will agree with subsequent direct measurement. If the test is universally successful, and if the generalization will predict, the hypothesis becomes elevated to the position of a scientific law.

In this procedure may be seen the four essential steps in scientific investigation. First is the observation of data, the accumulation of evidence. Second comes the classification of this data into orderly sequences, noting the significant, rejecting the irrelevant and defining the conditions under which the observations are true. Third, the scientist draws a generalization or hypothesis which is a short statement of the findings. Fourth

is the further testing of the hypothesis either to determine its limitations or to give it a place as a law or universal generalization.

A scientific law is not to be conceived as an ordinance which is, or must be, obeyed. It is a statement of uniformity, that under certain conditions of cause, certain results will in general happen. If a man falls from the top of a building he is neither defying nor obeying the law of gravitation; he is merely illustrating the operation of a cause and effect relationship of very general nature. The chief practical function of a scientific law is to predict. If it will forecast the result of certain conditions, or if it will disclose the most probable causes of an observed effect, the law may be used in practical applications. Lest scientific law be confused with divine edict, two more reservations are necessary. First, it should be noted that an essential part of every hypothesis is its limitations. The generalization holds true only if certain conditions are fulfilled. The relation between temperature and pressure, for example, holds only if other factors, especially volume, are constant. A second observation is that no scientific law is ultimate. The generalization concerning temperature and pressure may be included in a broader principle concerning the action of molecules in gases, and this in turn may be merely an aspect of some still more comprehensive formulation.

The Scientific Study of Behavior. In scientific psychology the same general methods of investigation are used as in the other sciences. It is noted, for example, that the passage of time after memorizing any material, such as a poem, is accompanied by a decreasing ability to remember it. This observation is carefully studied with many kinds of material and with precise measurements of the amount of retention after various intervals. The results are systematically treated, often with graphical and mathematical methods. When the findings have been properly substantiated by further testing, a generalization is formed, the Law of Disuse. Many subsidiary hypotheses are also made, describing variations in forgetting that occur under various conditions of learning and with different kinds of mate-

rial. The Law of Disuse is a helpful principle for practical purposes. It will predict, and many useful procedures, such as the arrangement of school reviews, are founded on it. In the derivation of this law the steps of observation, analysis, formulation of hypotheses and final testing are as clearly seen as in the example from the field of physics.

A large number of variations of the scientific method may be used in psychology, and it would be out of place to enumerate them all here. Three methods will be described, however, that are of particular significance in gathering the material pertinent to the psychology of adjustment. These are the experimental method, the method of measurement, and the method of case study.

The Experimental Method. A scientific generalization is no more reliable than is the observed data from which it is deduced. The most exact form of observation is the experiment, which is a study made under carefully *controlled conditions*, yielding *quantitative results* that can usually be expressed numerically in terms of time, amount, and other simple factors. The control of the experiment is a procedure designed to reduce the number of variables and influences that might affect the results, hence limiting the causes of the observed behavior to those that the experimenter wishes to study. Many psychological problems are attacked by experiments on lower animals, which can be subjected to more exact control than would be possible with human subjects.

An example of an experimental procedure, the results of which are applicable to the study of adjustments, may be found in the work of Warden and others on the strength of various drives or motives. Which is the strongest urge, that of thirst, that of hunger, or that of sex? Philosophers and arm-chair theorists have given many answers, but an exact experimental attack offers the only means of securing precise and definite information. One method used to determine the strength of the motives of the white rat was that of the obstruction box (Fig. 1). An animal in a known state of organic need is placed in the first compartment, while a goal object, water or food or

an animal of the opposite sex, is placed in the last chamber in full view of the experimental rat. Between this animal and the goal is a grid of metal strips that can be charged in such a way as to administer an electric shock. The rat must therefore overcome an obstruction of painful stimulation in order to satisfy his motive. Two principal measures were used, the intensity of shock that the animal would endure in order to reach his object (measured in electrical units), and the number of

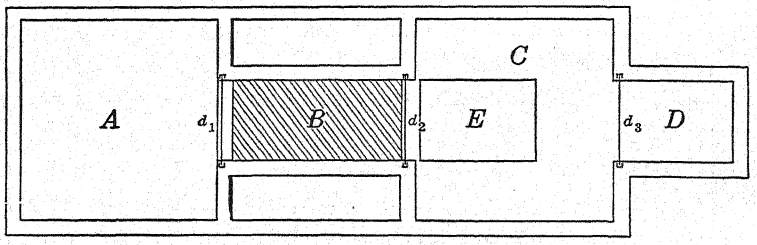


FIG. 1. OBSTRUCTION BOX FOR MEASURING ANIMAL DRIVES

The animal is placed in compartment *A*. He must cross the electric grid *B* in order to reach the release plate *E* that operates a door enabling him to gain the goal in compartment *D*. (Warden, C. J., *Animal Motivation*, Columbia University Press, 1931.)

times the animal would cross a grid giving a uniform shock after being returned to the starting point before his need is gratified (measured by simple counting). An important control of this experiment was that of keeping at a minimum those drives not being tested. Except when the hunger drive was being measured the animal was taken from a cage continuously supplied with the usual laboratory diet. Except when thirst was being tested the animal had been continuously supplied with water. Except when the sex drive was the experimental variable animals were chosen when at a period of minimum sexual activity as determined by other experiments. The experimental variables were studied when active in several degrees; for example, the thirst drive was examined when the animal had been deprived of water for various lengths of time. The results, briefly summarized, indicated that the strength of the three motives mentioned was in this order: thirst, hunger, sex.

It is obviously impossible to attack this same problem in man with a rigid experimental procedure, because of the greater

complexity of the human organism and the impossibility of as exact control. Many valuable experimental studies of human beings have been made, however, and these will be utilized whenever possible as they provide the most exact foundations of psychology. In general the experimental attack is more successful with simpler and more limited problems than with broader and more complex ones.

The Method of Measurement. Second in merit as a means of psychological investigation is the method of measurement. This procedure involves the construction of tests to measure various behavior traits and the comparison of the results of such tests. In employing measurement, the psychologist first critically examines the merit of the scales and devices used. The *reliability* of a test, which is the degree to which it measures consistently, must be known and sufficient. The test's *validity*, the degree to which it really measures what it is supposed to measure, must be taken into consideration. When for a given trait a test exists that has adequate reliability and validity, much important information may be obtained by measuring large numbers of people and comparing the results with other known measures or facts by means of statistical techniques.

A simple illustration of a test procedure yielding a valuable and significant result is found in Terman's study of the emotional stability of gifted children. Are children who are mentally bright more or less emotionally stable than average children? Popular opinion has frequently believed that the brilliant child is less well balanced. The application of careful measurement is necessary in order to settle the issue. Terman's procedure involved two measurements, one of mentality and one of emotional stability. By means of tests of general mental ability or intelligence, groups of gifted and of unselected children were chosen for comparison. The gifted groups consisted of children whose intelligence quotients were over 140, a very high figure. The control groups were children from the same schools, not selected on a basis of intelligence and therefore believed to represent the run of children in general. The reliability and validity of the tests of intelligence were

known and high. To measure emotional stability a questionnaire of 85 items (a modification of the Woodworth-Cady Personal Data Sheet) was administered. It contained items such as "Are you happy most of the time?... Yes No." and "Are you ever bothered by a feeling that things are not real?... Yes No." The score is the number of unfavorable answers. While the reliability and validity of this test are less than that of the mental ability tests, they are known and believed to be adequate for group comparisons. The results of administering this questionnaire showed that the gifted group marked an average of 11.4 unfavorable answers, the unselected group an average of 16.1, a difference of 4.7 in favor of the gifted. This difference was 9.70 times its standard error, showing that it was extremely unlikely to be due to mere chance. The answer seems to be, then, that the gifted are more rather than less emotionally stable, contrary to popular opinion in the matter.

The results of a research by the method of measurement must always be evaluated in the light of the merit and meaning of the tests used. In many instances, however, this technique yields findings of great value.

The Method of Case Study. Unfortunately the entire adjustive processes of humans are not amenable to study by the more exact research techniques. To impose a high degree of experimental control in the lives of individuals while studying their adjustments would destroy the reality of the situations to which they are compelled to adjust, and hence make the results of experiment inapplicable to the problems involved in everyday difficulties. Also, the causes of an adjustment usually lie in the entire life history of the individual and by the time he comes to the psychologist's attention it is too late to apply control or even measurement to many of his past experiences. To surmount this difficulty, the case method must be employed. A large number of cases of maladjustments which resemble each other as to symptoms are investigated to discover the probable antecedents and most effective curative measures. The investigation of phobias, which are irrational fears, offers a typical illustration. First, it is necessary to accumulate data.

These consist of cases of phobias, which have been exhaustively studied, diagnosed, and cured. Four such cases, in briefest outline of symptoms only, follow.

A British officer during the war showed a notable fear of small enclosed places. If circumstances necessitated his presence in a dugout he was seized by an uncontrollable fear, and his thoughts were entirely concerned with ways of getting out or with the possibility of being unable to escape. He preferred to be in the open trench under fire than in a shelter, so great was his fear.

Another case concerns a man who had a fear of being caught from behind. As he walked along the street he continually looked over his shoulder to see if anyone were back of him. He admitted that the fear was irrational, and the reaction annoying, but he was unable to rid himself of it.

A third case is of a young woman who had a fear of running water. Not only was she totally unable to go on boat trips, but even when riding on a train she had to pull down the window shade so that she would not see the streams which the train crossed. The sight of running water made her feel ill, weak, and panic-stricken.

Fourth is the case of the girl who was afraid of eyes, as accounted earlier in this chapter.

No conclusions should be drawn from these few cases, but from the study of a large number of similar ones several common factors can be found which may be systematically tabulated. First, in each of these cases the individual could not immediately or easily recall any experience which might have associated fear with the present stimulus of the phobia. The reaction seemed mysterious and unaccountable to him. Second, on sympathetic and persistent questioning the patient *did* recall a childhood experience in which he felt acute fear in connection with a situation similiar to the one which now bothered him. Third, it is noted that this childhood experience, usually because of some shame-provoking factor in it, was not confessed to the patient's parents or to those about him. He did not repeat, recall or review this experience, because its memory

was obnoxious to him. He "forgot" it, at least until the time of psychological treatment. Fourth, and most interesting, is the observation common to all of these cases, that the recall, rehearsal, and assimilation of the childhood fear experience cures the phobia, or at least greatly reduces its intensity. This collection of hypotheses serves effectively in the diagnosis and treatment of new cases of phobias. The case of the fear of eyes was, in fact, solved by searching for an associated, not easily recalled, shame-provoking, childhood experience.

The case study method is in accord with the universal steps of scientific procedure. The accumulation of data, analysis, making an hypothesis, and its practical use in prediction, represent the same sequence as was illustrated by the example from physics. The chief defect of the case method is in its manner of securing data. Most of its observations are obtained from the recall of experiences long past made either by the subject or by other persons. The unreliability of remembering must be recognized as a factor limiting the usefulness of case study. This error can be minimized by using objective methods as much as possible and by securing confirming reports from many persons. If the case method were used alone, almost any hypothesis could be based on it. The scientific psychologist regards conclusions from case data as valid only when they are compatible with the results of the more exact techniques of experiment and measurement.

Common Errors in the Interpretation of Results. In all fields using scientific method, but especially in that of human behavior, some warnings concerning the interpretation of results are necessary. These precautions are well illustrated in the study of phobias. One of the easiest errors into which to fall is that of *overgeneralization*. Not all phobias show exactly the same pattern of antecedents which has been illustrated. Though the generalization holds in many cases, it has the rank of a working hypothesis rather than of a law, for it is not universal in its application. It is useful for it solves cases, yet for complete knowledge several working hypotheses are necessary. If a case does not yield to one attack, another is tried. So long as its

limitations are recognized, however, the working hypothesis is a truly scientific tool.

Another pitfall is the *uncritical use of the term cause.* It should be noted that it has not been said that the childhood experience is the cause of the phobia. Causation is always complex, and especially so in human affairs. It would go beyond our data to generalize that one childhood experience is a single and sufficient antecedent, even in the cases cited. Other individuals may have such experiences without resulting phobias. Factors of the total training of the individual, of personality differences, of contributing factors before, at the time of, or following the fear experience, all may affect the result. To form an adequate notion of the causes of behavior difficulties much wider research is necessary and even with this, the concept of causation must be used with care.

The scientist should also avoid too great *dependence on hypothetical concepts* in explaining phenomena. An interpretation of phobias advanced by the psychoanalytic school, for example, states that the memory of the childhood incident has been "repressed into the unconscious." Now this is simply a descriptive analogy for the fact that a past experience may influence present behavior without being accessible to easy recall. It is an error to suppose that the problem has been settled by this verbal formula. There remains the necessity of explaining what is meant by repression and what the unconscious is, and this is likely to cause much difficulty. The unconscious is an imaginary concept. Other sciences have their imaginary concepts too, and they are not always mischievous. The electric current and the ether of the physicist are concepts without phenomenal reality which assist in explaining events that are actually observable. The best rule for the use of such concepts is tentatively to accept those which explain the most facts or for which simpler explanations cannot be devised, and to reject those which can be supplanted by more inclusive or simpler hypotheses. If, in the case here considered, the concept of repression into the unconscious can be replaced by an explanation based on the ordinary laws of remembering and forgetting,

which are simpler and which hold for a greater variety of situations, scientific purposes will have been more effectively achieved.

THE STUDY OF ADJUSTMENTS

Psychological Schools. To the student, one of the most confusing aspects of the study of adjustment problems is the existence of divergent schools of interpretation, whose methods and generalizations often seem to contradict each other. While many other schools of psychology exist, the two extreme points of view of greatest importance to the psychology of adjustment are the psychoanalytic and the behaviorist.

The *psychoanalytic* approach is historically the earlier of the two, having been established by Sigmund Freud in about 1895. At a time when conventional psychology was chiefly occupied with relatively academic problems such as those of sensation and imagery, Freud insisted on the importance of emotional experiences in determining the normality or abnormality of behavior. Discovering that human affairs were not determined chiefly by consciousness and deliberation as was then held, Freud utilized the concept of the unconscious. The psychoanalytic school has remained deeply influenced, however, by the introspective methods and mentalist interpretations of its predecessors. To the error of ascribing behavior to conscious mind, Freud's answer has been to extend the concept of mind. Psychoanalysis likes to call itself the "new" psychology, but from the standpoint of scientists who are interested in the objective study of behavior, it is the "old" psychology, more allied to the classic nineteenth-century schools than to the biological approach of more recent years. The historical significance of psychoanalysis has been profound, calling the attention of psychologists to important facts in human nature that were ignored before Freud made his contributions.

The *behaviorist* school reacted to the dominance of the concept of consciousness in the opposite way, by concentrating on the study of observable activity, preferably on reactions that

could be seen by a number of observers at once or that could be recorded instrumentally. Although objectivism in psychology developed gradually, chiefly through the work of animal experimenters, it became widely known as a system only in 1919, with the publication of John B. Watson's *Psychology from the Standpoint of a Behaviorist.* The behaviorists hold that mind, either conscious or unconscious, is a will-of-the-wisp, a derivative of the theological concept of the ghost-soul. Only by studying man as a biologist studies an animal or as a physicist studies matter can progress be made, according to this viewpoint. The strict behaviorist avoids any reference to ideas, attitudes or thoughts, to all that is commonly considered as "inner" to the individual himself, and bases his conclusions on an outer view obtainable by an observer.

Most psychologists do not adhere strictly to one school or the other. While an eclecticism which would take some of the theory of one school and some of the other would be only a hodge-podge of contradiction and confusion, a middle course exists. This viewpoint, which the present book will maintain, is as objective and biological in regard to theory as is possible in the present state of knowledge. In regard to method of investigation, the right of the individual to talk about himself will be allowed, even though this may be "introspection" or "analysis." All data, inner or outer, that can assist in describing the adjustment process will be used in proportion to its reliability. The present attitude is, then, objective without being strictly behavioristic. A brief account of the principal psychoanalytic theories will be presented in a separate chapter.

Understanding and Practicing. Many experienced persons, especially those who are psychiatrists, object to the study of adjustment problems by the layman, that is, by students without medical or broad psychological training. They claim that in this field more than all others, a little knowledge is a dangerous possession. The truth of this assertion depends on the attitude of the student. It is true that some harm is done by persons with partial training in psychology who go about diagnosing and treating their friends' adjustive habits. It must be

recognized that skill as an adjuster of human problems cannot be attained merely by reading a book or by taking a course. The acquisition of such a skill requires wide study in many fields and practical experience under the guidance of persons already capable. Lacking this extensive training, the student should be counseled to adopt an attitude of humility toward his own psychological knowledge.

It is absurd to suggest, however, that any knowledge exists of which it is best for mature persons to remain ignorant. The aim of scientific study is to understand and know, rather than to practice and apply. The aim of this book is toward the scientific rather than the practical approach. If applications are made, they should be accompanied with reservations appropriate to the great complexity of human nature.

The Method of Approach. The *Psychology of Adjustment* is divided into four principal sections, in which the study of behavior problems is pursued as an orderly sequence, each part being preparatory to that which follows.

It is necessary at the outset to obtain a clear view of certain fundamentals of human behavior. What are the origins of behavior? How does it develop and how is it modified? What arouses and directs the course of activity in general? By what processes do organisms adjust to their needs? These questions are considered in Part I, "Psychological Foundations." Without a careful study of these basic issues, the concepts of the adjustments themselves might become wordy and meaningless or biologically unsound. The method by which these essentials are attacked is that of the controlled experiment.

In Part II, "Varieties of Adjustive Behavior," are described the multitude of ways in which individuals respond to the combined situation of their needs and their environments. The chief method here is that of case study, interpreted in the light of such more exact findings as may be available and pertinent. Practical considerations dictate that the socially inadequate or undesirable forms of adjustment be considered at greater length than the more usual kinds of adequate adjustment.

The background of adjustment, the reasons why some people

adjust in one manner and others differently, forms the subject matter of Part III, "Personality." The nature of adjustive differences among persons is attacked largely by the method of measurement. Both case study methods and experimental researches furnish data for some theories as to how these variant personalities develop.

Part IV, "Techniques of Mental Hygiene," summarizes the practical methods for the study and treatment of the individual and critically examines the operation of various methods of readjustment. Most of this material is of empirical nature and drawn from experience and the method of case research. Experimental results offer some criticisms and explanations. A brief summary of suggested applications to the fields of education, industry, social work and family relationships is included.

SUGGESTED READINGS

A brief and interesting summary of the biological approach to the study of human nature is Dashiell, *Fundamentals of Objective Psychology*, chap. 2. A fuller conception of the importance of mental hygiene may be obtained from reading the first chapters of several books in this field, such as Burnham, *The Normal Mind*; Howard and Patry, *Mental Health*; and Kirkpatrick, *Mental Hygiene for Effective Living*. Case studies of adjustive difficulties of college students are given in Pressey, *Some College Students and Their Problems*.

The scientific methods employed by psychology are described by many general texts in this field. Schoen, *Human Nature*, chap. 2; Dockeray, *General Psychology*, chap. 2; and Watson, *Psychology from the Standpoint of a Behaviorist*, chap. 2, are especially clear and valuable. Hart, *The Psychology of Insanity*, chap. 2, gives a very general statement of the method of science, and applies it to abnormal psychology. The illustration of the experimental method cited in the chapter was taken from Warden (1931); that of the method of measurement from Terman (1926). The first case of phobia is from Rivers (1920), the second and third from Bagby (1928) and the fourth from the author's practice.

The various schools and points of view in psychology are described in Woodworth, *Contemporary Schools of Psychology*, and by Murphy and Jensen, *Approaches to Personality*.

CHAPTER II

THE ORIGINS OF BEHAVIOR

NATURE OR NURTURE?

To DISCOVER something of the origins of behavior is logically the first problem in the study of human adjustments. Adaptive activity may spring from two possible sources. It may be native and original, depending on inherited structure, or it may be learned and principally determined by the experiences of the individual and the forces acting upon him. Some combination of the two factors of nature and nurture, either separately or in interaction, must account for all of behavior.

The practical importance of an attempt to discriminate between native and acquired behavior arises from the widespread belief in the extent and potency of innate tendencies. Many people think of delinquency and social and individual maladjustment as manifestations of an inborn perversity of human nature. This notion has been nourished by religious dogmas of the sinful state of man, and by a common tendency to blame that which is not understood on mysterious and remote causes. Some psychologists in the past who have asserted the instinctive nature of such traits as pugnacity, greed and bullying have supported the popular opinion. To determine the truth or falsity of this conception is of practical value, since the correction of an undesirable native characteristic might be quite different from the remedy of an acquired one.

Another reason for the importance of the problem of original nature is a theoretical one. Native behavior, whatever it is, must be the basis for learned behavior. All psychologists agree that newly acquired acts are based on past performances. Every habit that is learned is the modification of some preexisting pattern. The sequence of learning must start somewhere. When the chain of acquired activities is pushed back

to its beginning, that beginning must be native. Even if original nature proves on examination to be of little practical importance in the study of the adjustment process, it must serve as the foundation on which learned behavior is built.

Phases in the Study of Native Behavior. The interpretation of native behavior has passed through three phases in modern psychology. The first phase was the *instinct approach* which argued for the existence of a large number of elaborate and generalized modes of unlearned behavior of which acquisitiveness, gregariousness, and cleanliness may be cited as examples. The claims of the instinct school, widely accepted from about 1880 to about 1920, were based on the universality of these types of behavior among all races and cultures of adult mankind, and on an inability to understand how such traits could have been learned so commonly. The Behaviorist movement ushered in the second phase in the study of original nature. In the examination of young infants the only specific behavior tendencies found were simple and limited types of reaction called reflexes. More elaborate patterns were believed to be learned. The Behaviorist point of view of native endowment may be termed the *reflex approach.*

While the instinct theory looked only at the adult and the reflex theory only at the infant, further research, conducted principally by biologists rather than by psychologists, has pushed the problem back into the prenatal stage. The reflexes, and the nervous system upon which they depend, have some history before birth. In tracing the behavior back to its origin in the development of the fetus, the *embryological approach* has at last investigated the very beginning of the organism as an individual. In this chapter, the three approaches to the study of native behavior will be described.

THE INSTINCT APPROACH

The theory of instincts has ceased to be significant and useful in psychology, but demands recognition because of its great influence on popular thought. Many schemes for the

classification of alleged instincts have been evolved. One of the earliest of these asserted that there are two fundamental instincts, self-preservation and race-preservation. These categories are only the attempt of the philosopher to gain a unitary view of animal behavior, and offer nothing toward the solution of the nature-nurture problem. Certainly the frightened animal, or human, does not run away from danger because of a reasoned consideration of his own future or that of his race.

A later form of the instinct approach classified under this heading certain complex systems of response to definite situations. These were asserted to be chiefly or wholly unlearned. The instinct theorists never agreed on what to include. Their claims and their lack of agreement was well summarized by Carr.[1]

> From an examination of seven standard textbooks, it was found that acquisitiveness, combativeness, fear, gregariousness or sociability, maternal love, and sex were unanimously regarded as human instincts. Constructiveness, sympathy, rivalry, and secretiveness were mentioned by six authors, and feeding, curiosity, and self-assertion by five. Four authors added hunting, imitation, and jealousy to the list, while repulsion, submissiveness, shyness, modesty, play, walking, cleanliness, and co-operation were mentioned in only three texts. Two authors included vocalization and bullying in their lists, while eleven additional traits were mentioned but once. Of a total of thirty-eight alleged instincts, sixteen were cited by a majority of the authors, while twenty-two received a minority vote.

The number of thirty-eight is a conservative one. Bernard (1924) in a survey of the writings of several hundred authors found no less than 14,046 human activities that had been termed instinctive by some one. A term so widely and loosely used can hardly retain its significance.

Probably the most influential list of instincts was that of McDougall, who offered seven "major" instincts in 1911, the number being expanded to fourteen in 1923. McDougall's later list included the instincts of protection (of young), com-

[1] Carr, Harvey A., *Psychology*, p. 380, Longmans, Green and Co., 1925.

bat, curiosity, food-seeking, repulsion, escape, gregariousness, sympathy, self-assertion, submission, mating, acquisitiveness, construction, and appeal (of young to parents).

Opponents of the instinct approach have proceeded to destroy it by two lines of attack. Some of the alleged instincts are rarely found in human behavior, their inclusion in lists of supposedly innate tendencies being probably due to analogy to animal behavior or to the need for bolstering up a general theory. These instincts may be refuted by showing that they do not exist. Other so-called instincts must be recognized as valuable descriptions of important segments of human behavior. The latter, however, may be shown to be learned rather than native.

So-Called Instincts Really Learned. The "hunting instinct" affords an excellent example of those supposedly native tendencies which can scarcely be found in human behavior. Thorndike (1913) stated that there is an original tendency for man, especially if hungry, to pursue a small escaping object, to pounce upon it and seize it. When grasped, it is inspected, manipulated, and dismembered. Young children were supposed to have an instinct to chase small animals. Now modern observation of children finds no such pattern of behavior existent. The description is undoubtedly to some extent true of animals, but no child chases things except for secondary reasons connected with the objects or except as he has been taught to do so. Some older writers cite the love of civilized man for hunting as an illustration of this instinct. This is absurd. No more learned or sophisticated sequence of activities exists than the preparation of rifles and equipment, the long journey to the mountains, to hunt deer or bear. As Watson (1924) points out, all that is possibly native in the "hunting instinct" is a positive reaction toward many objects and a tendency to manipulation.

The alleged instinct of acquisitiveness requires more careful analysis, for it is a common trait of adults and has a plausible basis in certain behaviors of very young children. An infant of five months may be observed to reach for, grasp, and convey

to the mouth any attracting object within its reach. Is this a native reaction? Careful observations of the development of the eye-hand co-ordination show its gradual appearance, its perfection by trial and error and the effect of reward or punishment on its continuance. The act is a very evident result of habit formation, a learned sequence. Much of the later training of the child has to do with the concept of possession on a more abstract level. He is carefully drilled on what he may or may not touch, on what is his and not his. The child's satisfactions arising from manipulation, mouth stimulation and approval are derived from the objects he possesses. From this training, rather than from any innate urge to acquire, comes the acquisitive behavior of the species.

Gregariousness or sociability is the human tendency to be better satisfied when in the company of others than when alone. It is very easy to show that this is a learned rather than instinctive trait. The little infant is helpless, and the satisfaction of his needs requires the attention of others. When he is fed, dried, or petted there is always another person present. The satisfaction therefore transfers by the simple learning pattern of the conditioned reaction which will be studied at length later, to the mere presence of the caretaker. This is first shown in the baby's smile at the approach of the mother or nurse. The training in gregariousness has begun. As the child has more experiences with a wider circle of individuals, the net result of these experiences being satisfying, he tends to be satisfied by the presence of people in general. The learned quality of this behavior is confirmed by the exceptions. If a child avoids men but goes to women, if he avoids negroes, or the postman, or the ice man, the cause can usually be traced to his experiences. In one interesting case a certain eighteen-month-old child reacted favorably to any Negro, but was universally shy with white people. This child had a Negro nurse who fed him, cared for him, and, it is to be feared, overfondled him. His chief contact with white persons was with his parents who noticed him chiefly to say, "Don't do this" and "Don't do that." The child had generalized this experience, and at an

early age had learned to be gregarious only with colored people.

The "maternal instinct" was a popular one with the adherents of the instinct school, on which many paragraphs often of poetic or emotional quality were written. Some asserted that motherhood gave instinctive skill in handling the child and in responsiveness to its needs. Observation contradicts this. The new mother's clumsiness in the care of the newborn is hardly exceeded by the traditional ineptitude of the young father. Only through learning and experience does skillful maternal care develop. The emotional aspect of the maternal behavior is more plausible. Thus Thorndike described the trait.[2]

> To a woman who has given birth to a child, the baby she sees, holds and nurses appeals almost irresistibly when it gives the cry of hunger, pain or distress, the start of surprise, the scream of fear, the smiles of comfort, the cooing and gurgling and shouting of vocal play. She cuddles it when it cries, smiles when it smiles, fondles and coos to it in turn. As the first human face it sees and turns to follow, as the familiar form which it nestles against in comfort and clutches in fear, she wins its tokens of affection. When it later points at objects, she looks and shares its interest. And later still, every signal of joy, or grief, or pain by this being whom she has held and nursed and fondled, has its quick response. In all this, original nature is the prime mover and essential continuing force.

This eloquent idealization is refuted by careful observation of the attitude of many young mothers. Quite a different picture from that of Thorndike is reported in cases of the mothers of illegitimate and otherwise unwanted children. Often the sole desire is to get rid of the encumbrance of the baby by speedy adoption. An instinct with such exceptions is no instinct at all. In more usual cases, the parents may have an intense emotional attitude toward the child, but as a result of many factors often complex and social in origin. The mother has been schooled throughout life on the romance of the cradle and also must take the correct attitude toward the child or be scorned by her social group. Some innate factors may be pres-

[2] Thorndike, E. L., *Educational Psychology*, vol. 1, *The Original Nature of Man*, p. 81, Teachers College Bureau of Publications, 1913.

ent in the pleasurable effect of a broadly sexual nature that nursing and fondling the baby has on the mother. These are so overlaid with habit and conventional attitude, however, as to be of little significance in civilized society.

The refutation of the entire list of old elaborate instincts may be carried out in a manner similar to that employed in the examples above. Fear, anger, and sex are tendencies that will be considered later under another classification. Combativeness, rivalry, fighting, sympathy, self-assertion, curiosity and play are certainly common and important human traits, but can be shown to be derived from simpler elements. Cleanliness, collecting, constructiveness, co-operation, submissiveness, and modesty are entirely learned performances often difficult to teach, as any parent can affirm.

On the whole, the instinct theory was an example of a type of fallacy against which much care must be taken, that of naming a phenomenon in place of investigating it. The instinct theory was a confession of ignorance. Any activity that could not be explained was assumed to have sprung into existence miraculously and just by the nature of things. It was named an instinct and thereby neatly dispatched without explanation. It is doubtful if the term instinct is useful even in animal psychology. It is better scientific procedure to admit that we are profoundly ignorant of the mechanisms underlying the nest-building of birds, for example, than to rest content in the verbal magic of giving the act a name as an instinct.

THE REFLEX APPROACH

Behavior at Birth. Stimulated by the experimental and critical work of the early Behaviorists, many psychologists have rejected the elaborate and generalized "instincts" of the older school and have turned to a more thorough study of young infants. The method of this trend in investigation is to determine exhaustively what traits are present at birth and what ones develop soon after birth under circumstances that point to nativeness rather than learning. The criterion of native be-

havior from the Behaviorist point of view is then a simple and concrete one: if an act appears at birth, it is native. The results of many careful infant studies show that innate activity can be conveniently classed under three heads. First, are definite and simple muscular and glandular responses to fairly specific stimuli, which are usually referred to as *reflexes*. Second, is a mode of diffused, less specific, non-purposive behavior which may be called *mass reaction*. Third, is a type of behavior involving intense visceral as well as muscular reaction, which will be described separately under the category of *emotion*.

Reflexes. Properly, the term reflex is a convenient abstraction used in neurology, physiology, and psychology to describe the operation of the simplest possible neural circuit. The reflex involves five elements of neural structure. (Fig. 2.)

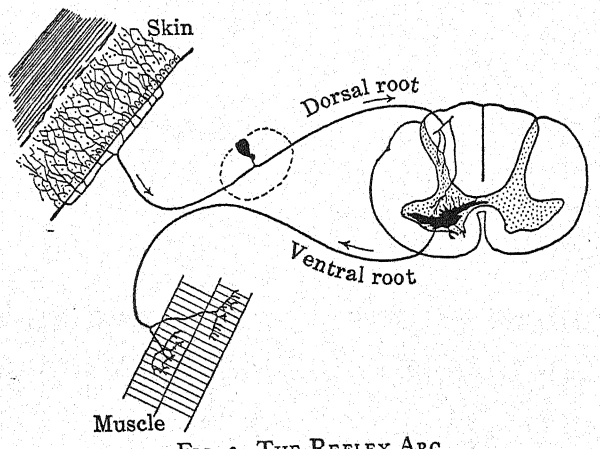


FIG. 2. THE REFLEX ARC

A sensory impulse travels from the skin receptor to the spinal cord, entering by the dorsal root. Connecting neurones convey the impulse to the motor neurone which, leaving by the ventral root, goes to the muscle, producing a contraction. (From Herrick, *Introduction to Neurology*, W. B. Saunders Co., publishers.)

A sense organ or receptor is stimulated, conveying the impulse by means of an afferent neurone to the central nervous system. Here a correlator or adjustor mechanism, which in the theoretically simplest form may be a single neurone, connects with the efferent neurone, which conducts the impulse to an effector apparatus which may be a muscle or a gland.

In actual behavior, no simple reflex circuit operates in isolation. A number of such arcs may act together to perform a limited reaction, these being affected by other circuits active throughout the body at the same time. The reflex action re-

ferred to by psychologists is a response that takes place in a relatively circumscribed muscular or glandular organ, as a result of a relatively specific stimulus. The presence of reflexes at birth is ascribed to the existence of preformed neural pathways, although this concept is subject to revision when considered from the embryological point of view.

The native repertory of reflexes is an extensive one. Warren (1922), reporting one of the most carefully made lists, includes sixty-six reflexes, of which thirty-one are relatively unmodifiable, persisting almost unchanged throughout the life span of the individual. Among these less modified reflexes are the pupillary reflex (to light), starting, shivering, winking, sneezing, yawning, salivation, blushing, and hiccoughing. Some reflexes which are often or always modified in the adult are coughing, weeping, stretching, biting, clasping, vocal reflexes, turning the head, sitting, and standing. Each reflex is called forth by a fairly specific type of stimulus and occurs only when this stimulus affects the organism, never spontaneously without stimulation. This inventory of reflexes, then, is the native behavior of man in terms of specific reaction. On the negative side, handedness (right and left), swimming movements, crawling and walking are probably not native or reflex acts.

The earlier Behaviorists considered many of the more complex learned acts as combinations or chains of reflexes. To some extent this is true. Skillful hand action has its basis in the hand reflexes. Walking and complicated leg and balancing performances depend in part on such reflexes as the extensor thrust of the leg and on the postural reflexes. In recent years, less importance has been attached to the rôle of reflexes in development. Complex behavior is more likely to be carved out of the massive activity of the infant than to be formed by a synthetic process of combination of reflexes.

Mass Reaction. In addition to possessing a number of specific forms of behavior, the infant displays a considerable amount of diffused and non-specific activity in which the body reacts as a whole. To any kind of stimulation, he kicks his legs, waves his arms, wiggles, squirms and vocalizes. This be-

havior occurs under the ordinary stimulation of light, skin contacts and internal states as well as in response to more clearly defined stimuli and is sometimes described as spontaneous or random. This characterization is unfortunate, for no movement occurs without a cause or stimulus, and the child is never without some stimulation, either external or internal. Violent stimulation such as loud noises will intensify this diffused type of activity, as will intense inner states such as those of hunger and pain. In general, there is a proportional relationship between the intensity and scope of the stimulation and the strength and diffusion of the response. The explanation of the mass reaction lies in the unorganized condition of the infant's nervous system. Any stimulus tends to spread its effect over many pathways, causing the activity of a wide variety of effectors.

When the child has learned the important acquisitions of walking and the eye-hand co-ordination, mass or diffused activity is changed in character. It now consists in wide and varied response to many objects in the environment, with the learned skills as its component parts. The child tends to walk everywhere, look at everything and handle everything. Experimental evidence shows that at this stage the child has positive or approaching reaction tendencies toward almost every stimulus. He tends to reach for and try to handle candy, fire, bright objects, blocks, animals, cakes of soap, quite everything, indiscriminately. Only to pain and excessively intense stimuli does the child show the more vigorous types of reaction which take him out of the range of stimulation, and result in the acquisition of avoidance reactions. The positive behavior of children, and of adults, toward so many stimuli was formerly termed the instinct of exploration, of manipulation or of curiosity. It is probably better to consider such behavior as a type of diffused response to non-specific stimuli, rather than as a particular instinct.

The mass activity of the child is more important in the development of learned behavior than are his specific reflexes. Many habits are built by the refinement and differentiation of diffused motor activity. The random handling of blocks is

transformed through learning into the more skillful acts of later childhood, the youth's habits used in the school shop, and into the elaborate performances of an adult trade. By the coordination of the primitive vocal responses of the infant, language is learned. The manner in which these modifications occur will be considered later.

THE EMBRYOLOGICAL APPROACH

Behavior Before Birth. Even behavior that is present at birth has some past history. It was not present a few months before when the child-to-be was a single celled fertilized ovum. At birth the infant does not spring Minerva-like from nothingness into complete functional existence. During the prenatal period the behavior of the organism and the structure of the nervous system on which behavior depends gradually develop. Two approaches to the study of the origin of traits have been made in recent years. One is observational, being based on the careful enumeration of the mode and time of the appearance of traits during the fetal period and of the corresponding development of the nervous system. This attack has contributed much to the understanding of growth, both prenatal and postnatal. The second approach has been more theoretical, although not without some experimental basis. In this line of thought, various hypotheses have called attention to the probable rôle of stimulation and of environmental factors in determining behavior before birth. These hypotheses suggest that much of the specific activity present at birth has been *prenatally learned.* This revolutionary concept has had considerable effect on psychologists' views of the origins of behavior.

Mass Activity and Individuation. The most thorough study of the embryonic and fetal development of behavior is that of G. E. Coghill (1929) on the larval *Amblystoma*, or tadpole stage of a variety of salamander. This little amphybian is particularly adapted to such a study as it begins life in a transparent egg and becomes free moving at a stage of development corresponding to a prenatal stage in humans. *Amblystoma*, un-

like the mammals, can easily be observed from fertilization to maturity. Coghill's description of the development of the function of locomotion illustrates the general course of maturation.

The swimming reaction of *Amblystoma* is the first to develop. Coghill distinguishes five stages in the progress of this behavior. First, is a *non-motile* stage in which the muscles will respond individually to strong stimulation, but will not respond to milder stimuli acting on the skin receptors. Second, the

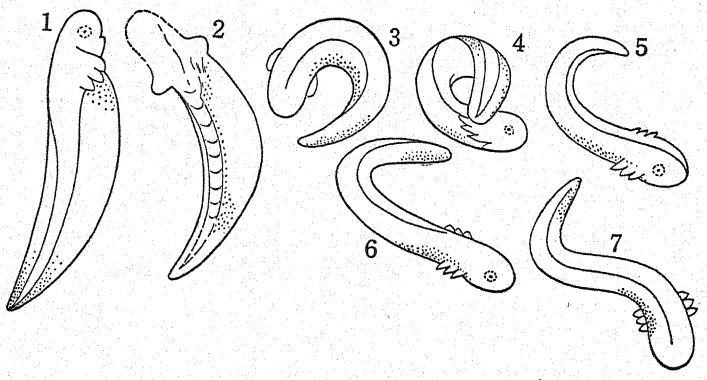


FIG. 3. THE DEVELOPMENT OF LOCOMOTION IN AMBLYSTOMA

Tracings of motion pictures (enlarged) of *amblystoma* performing the early swimming movement. The animal is at rest in 1. In 2, the head is moving to the left so rapidly that it blurs. This is the first "early flexure" movement. The development of the "coil reaction" is seen in 3 and 4. In 5 and 6 the reaction continues, the anterior part of the trunk having straightened out, while the original flexure still affects the tail. In 7, a flexure to the right has begun, giving the "S-reaction." The repetition of this sequence results in swimming. (From Coghill, *Anatomy and the Problem of Behavior*, by permission of The Macmillan Company, publishers.)

early flexure stage appears in which the first movement is a bending of the head in the direction opposite to a light touch stimulation. (Fig. 3.) Third, as the animal matures further, this flexure comes to travel down the entire length, resulting in a tight *coil reaction*. This is sometimes quickly reversed into a coil in the other direction. Fourth, a further development appears in the "*S*"-*reaction*. Before one flexure has reached the tail another flexure in the opposite direction has begun. Fifth, *swimming* occurs when the "S"-reactions are made with sufficient rapidity to result in progression.

The development of terrestrial locomotion, walking, is a much later stage in the maturation of *Amblystoma*. The animal swims

before any true limbs have developed. Subsequently the fore limbs develop and later still the hind legs. At first both sets of limbs move only as a part of the total reaction of the trunk. This is characterized as the dominance of the more inclusive whole-body activity over that of the more specialized parts. The *Amblystoma*, in its initial attempts, walks as it swims, the legs moving with the trunk. Gradually independent action or *individuation* emerges. The fore limbs first gain a certain autonomy of action, then the rear ones. Also the development of individuation in any one limb follows an orderly course. At first the leg moves independently as a whole, then knee flexures appear, and last foot and toe movements. In time the "S"-reaction of the trunk becomes reduced as the limbs acquire independent action and the characteristic land locomotion of the species is established.

Certain important generalizations are deduced from these observations. Behavior is seen to appear initially as a mass reaction of the entire organism. The specific responses emerge from this total pattern. As Coghill says "Behavior develops from the beginning through the progressive expansion of a perfectly integrated total pattern and the individuation within it of partial patterns which acquire various degrees of discreteness.' [3] It is also noted that the course of individuation is from *head to tail* and from *central to peripheral*, the independence of those parts near the head being achieved first, and those at the ends of the extremities last.

Coghill's detailed study of the development of the nervous system in the *Amblystoma* shows that both motor neurones to the muscles and sensory neurones from the skin and kinesthetic sense endings exist in the non-motile state. The two essential ends of the reflex arc exist before they function but they are not connected by the third or central neurone. With the ability to respond to touch stimuli the third set of cells reaches maturity bridging the gap between the sensory and the motor. Initially these cells carry impulses from the sensory organs of one side to

[3] Coghill, G. E., *Anatomy and the Problem of Behavior*, p. 38. By permission of The Macmillan Company, publishers.

the muscles of the opposite side of the tadpole. Considering the organism as a machine, this explains why stimulation on one side results in contraction of the opposite muscles, hence in bending away from the stimulus. Also, these connecting cells exist at this early stage only in the head region, causing the head-tail sequence of response seen. Further development of other patterns of connecting cells leads to the "S"-reaction and swimming. That these cells develop because of influences within the animal is demonstrated by the experiment of Carmichael (1926), in which certain tadpoles were anesthetized to prevent the reception of external stimuli while still in the non-motile stage. After a normal group had begun swimming the anesthetic was removed from the experimental tadpoles who then swam in a short time.

The mammalian fetus, since it resides in the body of the mother, is more difficult to investigate, yet much is known of the development of the rat, the guinea pig and the cat, through the use of operative techniques in which fetuses of various ages are removed from the mother for study. In addition, several investigators have made a limited number of observations on human fetuses operatively removed for reasons necessary to the mother's health.[4] Although the mammals are more highly organized than the amphibians, the general course of development is rather similar. After an early non-motile stage, certain investigators report that the first movements noticed are of head-bending and trunk-bending. The limbs are first moved as a whole, followed in sequence by elbow, wrist and finger movements as individuation progresses peripherally. The fore legs or arms typically precede the hind legs in development, as noted in the lower organisms. Human and other mammalian fetuses, then, show in some measure the primacy of mass movement followed by individuation. They also display the trend of development from head to tail and from center to periphery, characteristic of the lower animals.

The observations made from the embryological approach

[4] Most of these studies are summarized by Carmichael in his chapter in Murchison (1933).

contradict the earlier Behaviorist conception of integrated behavior as chains of initially separate reflexes, which were in turn accounted for as preformed neural pathways. The embryological studies emphasize the primary unity of the organism and have caught the "preformed" neural circuits in the act of being formed.

The Effect of Stimulation on Development. A still more radical set of hypotheses concerning the origin of behavior has been correlated in a challenging manner by E. B. Holt (1932), on the basis of the embryological observations of several scientists.

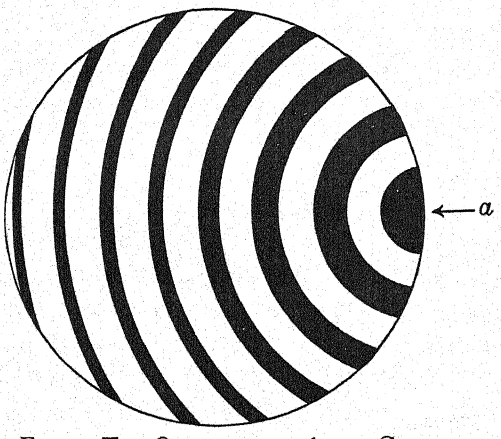


FIG. 4. THE ORIGIN OF AN AXIAL GRADIENT

The point of action of an external factor is indicated at *a*. The region of highest activity is the black spot; the narrowing rings indicate the physiological gradient. (Child, *Individuality in Organisms*, University of Chicago Press.)

The most fundamental characteristic of the nervous system and the first to be seen in embryonic development is the existence of an *axis*. The main axis is the head-tail or cephalocaudal axis which is seen in the adult as the brain and spinal cord. C. M. Child (1915, 1921, 1924) has advanced evidence to indicate that the development of the axis does not occur just "by nature" but is a result of definite physiological processes within the organism. These processes may be influenced by external stimulation, both normally and artificially. Initially, some portion of the primitive organism is physiologically more active than some other part, either because of chemical composition or external influence. This more active portion is consuming oxygen at a greater rate than other parts, is of higher electrical potential and is more susceptible to certain drugs. It may be considered as more actively alive than are the other parts of the organism. Between the active point and other points, there-

fore, there exists a difference in rate of development, which is termed a *physiological gradient.* (Fig. 4.) Cell growth tends to be most rapid in the highly active area, and growth proceeds down the gradient, that is, toward less active portions. The head region of the animal arises from the more active end of the major gradient, with the various organs along the axis. About this principal axis the appendages develop symmetrically. The nervous structure originates in the differentiation of cells of the outer layer of the embryo, along the axis. Since the axis is determined by physiological action, anything modifying this process will modify it. Child reports evidence of changes in axial development effected by the application of light, electric fields, gravity and chemical influences, in certain lower organisms. The most fundamental feature of the nervous system, the axis, is thus seen to develop in response to internal or external stimulation, and not in an unmodifiable manner.

The cells of the nervous system that have differentiated along the axis are as yet without the long fibres that they later possess as neurones, being called, in this stage, *neuroblasts.* These neuroblasts send out projections or *axones* in two general directions, *along the axis*, and *at right angles to the axis.* The fibres which grow along the axis become, in general, the connecting neurones, those that grow outward, the sensory and motor neurones. Observations indicate that the growth of cells is not spontaneous, but is initiated and directed by the physiological conditions of surrounding tissues. The earliest cells to develop send axones downward along the axial gradient. Because of potential differences between the top and bottom of these cells, they become active or conducting. When the active bundle of axis fibres passes near a still undifferentiated neuroblast it acts on it, because of the chemical or electrical fields set up. The neuroblast first sends out an axone away from the active fibres, later sends outgrowths of the cell body called *dendrites* toward the stimulating bundle. The axone growth has been called *stimulogenous fibrillation* (S. T. Bok) and the dendrite extention *neurobiotaxis* (C. U. Ariëns Kappers).[5] Stimulogenous fibrilla-

[5] Described in Holt (1932), Child (1921), and Freeman (1934).

tion means "the fibres grow because of stimulation." The concept of neurobiotaxis ("nerve life growth") will be a useful one in many applications and may be stated as follows. If a developing neurone is adjacent to another neurone which is concurrently excited, it tends to send forth dendrites which meet and establish connection with the other. Stimulogenous fibrillation and neurobiotaxis are diagramed in Figure 5. The growth of neurones under the stimulation of physiological influences has been observed in cultures of embryonic tissue of lower organisms.

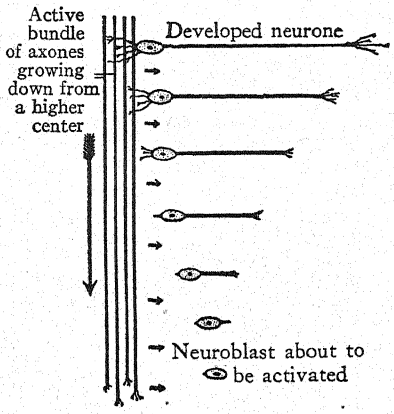


FIG. 5. THE GROWTH OF NEURONES

A schematic diagram to show the rôle of stimulation in the development of neurones, according to the theories of Bok and Kappers. The large arrow indicates the growth of the activating axis bundle of neurones. Short arrows indicate the direction of stimulating current from this bundle. Note that the top neurone which has been acted upon by the stimulating current for the longest time is most developed. The bottom neuroblast is about to be affected. (From Warren and Carmichael, *Elements of Human Psychology*, Revised, 1930, after Kappers. *Journal of Comparative Neurology*, 1917, vol. 27.)

These hypotheses concerning the development of axis and the growth of nerve fibres give a picture of the development of the branching structure of the nervous system, and suggest that even the *form* of neural organization is influenced by stimulation, that is, in a broad sense, by "environment." The complex nervous system so evolved is capable of transmitting stimulation received at any one point to all of the effectors of the body. This is the neural basis of the undifferentiated mass activity previously described.

How Reflexes May Be "Learned." At birth the organism displays not only mass movements but also a number of quite specific reflexes. A number of psychologists have suggested the striking possibility that the reflexes are learned before birth, the most complete account of this theory being that of Holt.

The grasping reflex offers an excellent example for applying Holt's explanation. In the mass activity of the fetus the contraction of the hand and arm muscles involved in grasping will

occur at first as a part of the total activity pattern. When this happens, the pressure receptors of the palmer surface of the hand will be stimulated mechanically by the pressure of the fingers against them and will transmit the sensory impulse to the central nervous system. (Fig. 6). Hence two reactions involving adjacent neural tracts, the sensory and the motor, are

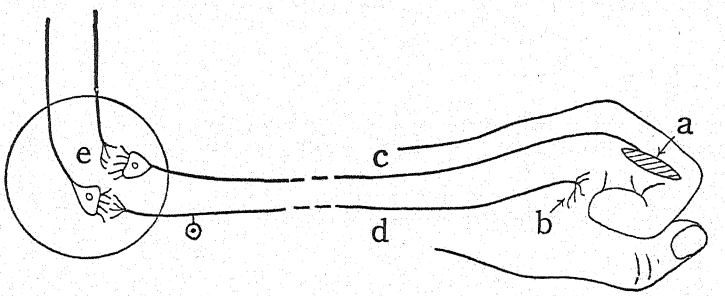


FIG. 6. ESTABLISHMENT OF THE GRASPING REFLEX

An impulse of diffused nature travels over the neurone *c*, to the muscle fibre *a* which contracts. The contraction causes a pressure on the skin receptor *b*, sending a sensory impulse back over the neurone *d*. Since at *e* two adjacent neurones are simultaneously active a synapse may be formed by neurobiotaxis (dendrite growth). In the future, the sensory impulse in *d* becomes "short circuited" at *e*, going directly back via *c*. This is the grasping reflex.

simultaneously active. This is a situation that leads to connection or learning. The most important principle of learning, to be developed in the next chapter, is that of the simultaneous occurrence of two reactions. The pressure on the palm, acting at the same time as the motor response, will become connected to it and will henceforth elicit this specific reaction, which is the grasping reflex exactly as observed in infants after birth. The co-ordination of the muscles involved in the reflex is similarly acquired and, of course, the muscle responses are connected to a large number of skin receptors, not just to one as in the simplified scheme illustrated. The grasping reflex and many other large-muscle reflexes of infants are thus *reflex-circles*. The reflex tends to cause the muscles to press against the stimulus, thereby stimulating it anew. The lip and jaw closure reflexes, the extensor thrust of the leg when the foot is pressed, the "defensive movements" of the arms when held to the body, and probably also the knee-jerk and ankle clonus reflexes are circular reflexes, to name only a few. All may be prenatally acquired

in the same manner as that described for the grasping reaction.

Although the concept of the circular reflex does not stand or fall with the truth or falsity of Kapper's hypothesis of neurobiotaxis, this principle offers a convenient explanation of the neurology of the acquisition of responses. When two adjacent neurones are concurrently active, they tend to be joined functionally. The theory of neurobiotaxis holds that this is effected by the growth of dendrites. Thus, the sensory and motor circuits may be joined by the growth of dendrites at a synapse (as "e" Fig. 6) from the motor neurone cell body to a connecting neurone associated with the sensory pathway. Repetition of the act will cause a sufficient growth of these projections to insure functional conduction at the synapse.

From the point of view of the more radical embryological theories, the original nature of man reduces to nothing more than the presence of life processes. The universal properties of living organisms are metabolism, susceptibility to stimulation and a tendency to respond and be modified. These and nothing more are native when considered from the embryological approach. The embryological theories are, however, a frontier line of investigation at the present time. Much is yet to be discovered and the final formulations may differ considerably from those which have been presented.

EMOTION

Disorganized Response. The account of the origins of behavior so far given is incomplete because of the omission of emotion, a type of response that is of peculiar importance to problems of adjustment. The emotional reaction is noted for its *intensity*, the muscular activity being, at least in infants, more vigorous and of greater scope than in any other form of behavior. Emotion includes widespread and violent changes in the *visceral state* of the individual, affecting all of the abdominal systems and most glands. Emotional behavior, though modified, exhibits throughout the life span a *persistence* equaled by only a few of the most deep-seated reflexes.

If a child is firmly held so that it cannot move its trunk or arms, an emotional reaction will occur. The body stiffens and slashing movements of the arms and legs are seen. The child is likely to cry and scream or at times hold his breath until his face becomes red or even purple from blood changes due to lack of oxygen. The internal changes, as noted by Cannon (1920) include acceleration of heart beat, irregular breathing changes, inhibition of the movements of the stomach and intestines, contraction of visceral blood vessels, and erection of hairs on the surface of the body. Glandular effects are apparent in the lessened secretion of digestive glands, including the salivary, and in the discharge of adrenin into the blood from the adrenals, two small endocrine or ductless glands located near the kidneys. The secretion of adrenin sets into operation a number of important secondary physiological changes, such as the release of sugar into the blood from the liver and an increase in general muscle tonus. This is a picture of very profound, disorganized reaction.

Concepts of Emotion. The analysis of emotion and the determination of the situations in which emotional response may be expected to occur are problems that have received much attention. The earlier discussions, corresponding to those of the instinct approach previously outlined, were directed chiefly toward the introspective study of emotional states as felt by the participant, and the enumeration of the various types of emotion. Long lists of separate emotions were compiled, including such categories as fear, anger, disgust, distress, lust, wonder, elation, grief, jealousy, shame, dread and remorse as well as such milder states as creative feeling, amusement, tender emotion (toward children) and coyness. These emotions were believed to be separate and relatively independent states of consciousness and were considered largely native. Various classifications were often employed to reduce the bulk of the list, the emotions being designated as coarser or finer, stronger or weaker, retrospective, present or anticipatory, and so on until the classifying urge of the introspectionist had exhausted itself. The instinct school was as generous in accepting original stimuli

for an emotion as in the multiplication of the number of them. James, typically, states that fear is natively aroused by certain noises, strange men, strange animals, certain kinds of vermin, solitude, black things, dark places, holes and corners, high places, certain ideas of supernatural agency, and human corpses.

The modern tendency of psychologists to study behavior for itself has had much the same effect on attitudes toward emotion as it did on those toward instinct. The numberless and complex emotions of the adult were recognized as mixtures of emotional and intellectual experiences, all greatly modified through learning. The Behaviorist studied emotion by physiological methods and by observation of the reactions of young children. The pioneer study of John B. Watson, which has had a marked effect on all subsequent work, distinguished only three distinct emotional states in infant behavior. These were termed *fear*, *rage* and *love or sex*. Two general classes of stimuli were found that would call forth the response of emotion plus withdrawing, called fear. These were loud sounds and loss of support or equilibrium. One stimulus only elicited the rage response of emotion accompanied by struggling, that of restraint of movement. The love or sex emotion was of very different character from the other two. Its stimulus was stroking or patting of sensitive zones, tickling, rocking and petting in general. The reaction observed consisted of cessation of crying, smiling, gurgling, cooing, and, in the case of older infants, of extension of the arms.

A valuable contribution made by Watson was the demonstration of the acquired character of the emotional response to many stimuli formerly thought to be native arousers of the condition. Tests performed with babies four to six months of age showed a total lack of emotional response to a black cat, a pigeon, a rabbit, a rat and a large Airedale dog. The infants also showed no fear of fire or of the dark. Adult emotional reactions to these stimuli, then, must be learned.

Emotions or Emotion? Several more recent studies both experimental and physiological indicate a need for revising Watson's conception of emotion. Mandel Sherman (1927) tested

the ability of observers to name the emotion shown by infants who had been subjected to a variety of stimuli. One of his procedures involved the use of motion pictures of infants under twelve days of age who had been stimulated by hunger, sudden dropping, restraint of head and face or by sticking with a needle. In another procedure the infants were stimulated behind a screen and then directly shown to the judges. Graduate students of psychology, nurses and medical students, serving as observers, showed little accuracy or agreement in naming the stimuli causing the responses seen. For example, in one motion-picture group, "anger" was designated 11 times for hunger, 14 times for dropping, 13 times for restraint and 8 times for the painful stimulus. Of the psychology students, who presumably were familiar with the work of Watson, the response to dropping was termed "fear" by 27 and "anger" by 4 when they could see the stimulus applied, but when the dropping was performed out of sight of the judges, 5 called it "fear" and 14 "anger." It is very evident that these two states cannot be differentiated by observation of the end-reaction, and that seeing the stimulus seriously biases opinion.

Further evidence of the confusion of fear and rage comes from physiological research. A multitude of studies have so far failed to find consistent differences between the visceral states accompanied by introspective reports of various emotions. There is no definite pattern of heart beat, blood pressure, breathing or stomach tonicity which is characteristic of fear and different from that of rage. To the physiologist these emotions are seen as one and the same condition.

These observations lead to the belief that Watson committed a serious experimental error in his original study. If a child was free to move, as when the loud sound stimulus was employed, any general muscular activity was interpreted as "withdrawing movements." If the child was held, restraint being used as a stimulus, the *identical* patterns of muscular movement might have been interpreted as "struggling." In the latter case the infant cannot move away or make avoidance movements, simply because of the fact of the restraint. The crucial

difference between fear and rage, therefore, lies not in the response of the organism but in the situation which it confronts.

There is, however, a generalization that may be made concerning the fear-rage pattern of emotion. All situations that natively elicit it are stimuli of excessive violence, injuring or imperiling the organic integrity of the individual. Hunger, dropping, cuts and pricks, rough handling, restraint and loud noises (excessive stimulation of the auditory receptors) are all of this class. The general stimulus for emotion therefore is *overstimulation*. Emotion, in this light, is simply an overintense and overgeneralized reaction to excessive or tissue-injuring stimulation. In children or adults other overstimulations, as by too much attention or activity, may cause an identical visceral state of emotion without either fear or rage being reported, the condition being commonly known as excitement. Fear, rage and excitement are indistinguishable internally and may be considered as one emotion rather than three. The name *excited emotion* or, possibly, simply *emotion* may be applied to this pattern.

The notion of a primitively simple excited emotion is harmonious with the best theory concerning the rôle of this type of behavior in the development of the race. A reaction so disorganized and so paralyzing to the adjustive activity of the organism is of questionable biological value, and its survival throughout the process of evolution is perhaps surprising. Cannon, in his *emergency theory* of emotion pointed out that the visceral changes occurring under intense stimulation are of utility in primitive life when brute struggle or flight are adaptive. The inhibition of digestive processes releases blood for circulation to the extremities, which end is also facilitated by the increased heart action and by the expansion of peripheral blood vessels. The secretion of adrenin not only accelerates heart beat but also decreases muscular fatigue and even promotes the clotting of the blood, a useful adaptation for a fighting animal. Cannon's theory shows that emotion prepares for combat or for flight alike and is equally applicable to fear and rage.

The marked difference between the fear and rage states in adults, in outward muscular pattern and in introspective aspects, can be explained. Rather early in life the child learns to differentiate between situations that are best met by combating them and situations that require running away. Some responses which involve emotion and struggling become stereotyped early in the individual's experience and the rage response is formed. Other overstimulating situations become connected to emotion plus withdrawing, constituting fear. Rage, then, is excited emotion plus learned struggling movements. Fear is excited emotion with the addition of learned avoidance movements. There may be vacillation between these two attitudes. Even an adult when confronted by an unexpected physical opponent may waver between fighting and flight, between rage and fear, without any observable change occurring in his visceral state as he shifts from one to the other. While it may be convenient to speak of fear and rage as separate types of response at times, the fact that they are fundamentally identical as emotion must not be ignored.

Emotion and the Birth Experience. The embryological approach has so far contributed little to the understanding of the origins of emotion. In the uterus the fetus is very effectively protected against overstimulation and it is not surprising that emotion does not occur before birth. An ingenious hypothesis suggests that the event of birth itself, as the first overstimulating experience of the individual, has peculiar significance in the development of emotion. This view is not a recent one, but was voiced by Erasmus Darwin, writing in 1796.

> As soon as the young animal is born, the first important sensations that occur to him are occasioned by the oppression about his precordia for want of respiration, and by his sudden transition from ninety-eight degrees of heat into so cold a climate. He trembles, that is, he exerts alternately all the muscles of his body, to enfranchise himself from the oppression about his bosom, and begins to breathe with frequent and short respirations; at the same time the cold contracts his red skin, gradually turning it pale; the contents of the bladder and of the bowels are evacuated: and from the experience of these first disagreeable sensations the passion of fear

> is excited, which is no other than the expectation of disagreeable sensations. This early association of motions and sensations persists throughout life; the passion of fear produces a cold and pale skin, with trembling, quick respiration, and an evacuation of the bladder and bowels, and thus constitutes the natural or universal language of this passion.[6]

Certainly at birth there is an intense overstimulation and undoubtedly a resulting visceral upheaval, which has adaptive value in getting the infant started on his worldly existence. The typical cry is part of this reaction. It is interesting to note that at birth the infant first experiences noise, violent restraint of movement and loss of support which appear as emotional stimuli early in life. Perhaps a conditioning or learning process occurs at this time by which these stimuli become especially attached to the emotional response.

Love and Sex. A response of entirely different character from excited emotion is that described by Watson as "love or sex." The stimuli of stroking, petting and fondling arouse a condition of relative bodily calm and do not disturb the normal functioning of the viscera. The infant or animal, once accustomed to this kind of attention, will do nothing to avoid it, but will act in such a way as to facilitate, intensify and prolong the stimulation. When it ceases or is denied, crying, restlessness and other evidences of annoyance are apparent.

Some question has been raised concerning the identity of the mildly stimulating states induced by skin stroking with the responses peculiar to the genital regions to which the term sexual is applied in the more restricted sense. Some writers, notably the psychoanalysts, have held that love and sex are psychologically the same. The infant is regarded as possessing a diffuse and relatively undifferentiated sensitivity although the lips, genitals and anus are held to be somewhat more receptive than the rest of the body. As the individual matures greater specialization develops, the most highly sensitive region being the genitals. According to this view, adult sexuality

[6] Darwin, E., *Zoonomia*, vol. I, section XVI, p. 148, 1796. Quoted by Culpin, M., *Recent Advances in the Study of the Psychoneuroses*, p. 97.

normally and gradually develops from the all-over sensitivity of the infant. That gentle fondling, in adults, is responded to in the same way as in the infant, and is at the same time a universal preliminary to specific sexual behavior, indicate that there is some relationship. In strong sexual excitement, however, bodily changes which resemble the excited emotion occur, these being very different from the milder states shown in Watson's observation of infants.

That love in Watson's sense should be classed as an emotion is doubtful. Its utter difference from the fear-rage pattern is striking, and it lacks the "emergency" character of emotion as previously described. Love may possibly be a native form of response akin to the reflexes but of more diffuse nature. An alternative hypothesis suggests that it is a composite of genital reflexes and of learned behavior based on the early nutritive (suckling) satisfactions of the infant. That the child is gently held and patted in connection with nursing is evident, and the subsequent responses to these stimuli may be acquired by associative learning. Whether native or acquired, the love response is the origin of much of social behavior, and assists in understanding the development of some important motives.

The Bodily Basis of Emotion. The concepts of excited emotion and of both calm and excited "love" responses are considerably clarified by an examination of the nervous mechanisms that underlie their inner response patterns. The neural control of most visceral reactions is effected by a specialized structure of neural cells, lying chiefly outside of the cerebro-spinal or central nervous system, known as the *autonomic system* (Fig. 7), because of its relative independence of central or voluntary control. The autonomic system is entirely efferent in character, that is, its fibres are of the motor type, conducting outward and causing responses of the visceral organs. Fibres arising from the spinal cord (preganglionic fibres) terminate in *ganglia* which are nerve centers lying in the visceral cavities. From the ganglia secondary (post-ganglionic) fibres proceed to the organs. Anatomically the autonomic system may be said to consist of three parts, a *cranial* or upper division whose pre-

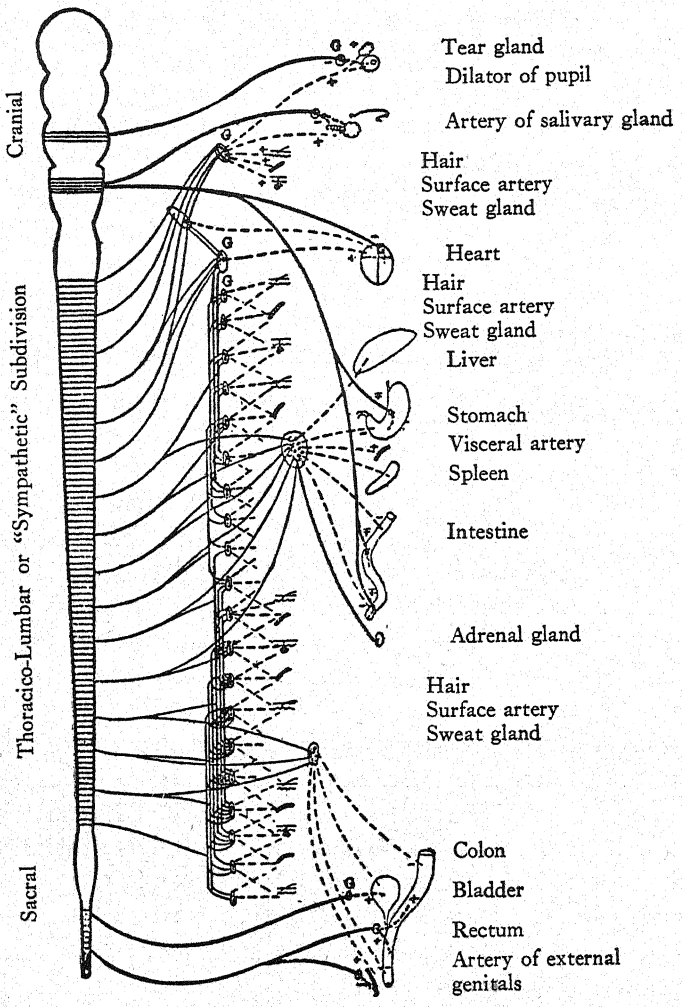


FIG. 7. THE AUTONOMIC NERVOUS SYSTEM

The brain and spinal cord are indicated at the left. Nerves from the *cranial* division go to organs in the upper part of the body; from the *sacral* division to the lower part; while those from the *sympathetic* or *thoracico-lumbar* division go to both. The + signs indicate an accelerating effect on the organs concerned, the − signs an inhibiting or retarding effect. Note that the action of the sympathetic division is antagonistic to that of the other two. (Cannon, *Bodily Changes in Pain, Hunger, Fear and Rage*, D. Appleton Co., publishers.)

ganglionic fibres come from lower brain centers, the *thoracic-lumbar* or *sympathetic* division to whose ganglia fibres come from seventeen spinal nerves in the middle portion of the cord, and

the *sacral* division which arises from the lower part of the cord. The functions of the upper and lower divisions are similar and they act together in many instances, hence they are grouped as the *cranio-sacral* division, which is opposed to the thoracic-lumbar or sympathetic group.

All visceral organs and most glands have a double set of activating fibres, one coming from the thoracic-lumbar and the other from the cranio-sacral division. The responses to innervation from these fibres are *antagonistic* in character. In general, if an organ is accelerated by action of one division it is inhibited by the impulses from the other. Thus the cranio-sacral division controls the normal action of the heart and stimulates the processes of the stomach. The thoracic-lumbar division accelerates heart beat and inhibits digestion. It is clear that this middle division operates in excited emotion with an intensity that overcomes the antagonistic impulses. The results of thoracic-lumbar control are exactly the visceral responses in emotion that have been described previously. The adrenal gland is an integral part of this division. Embryologically it originates from the same cells as do the sympathetic ganglia and is a ganglion in its own right as well as a gland, receiving fibres directly from the cord.

The thoracic-lumbar system clearly explains the visceral state of excited emotion. It is slow to react and persistent in response when aroused, although these characteristics of emotion are also due in part to the slow responses of the visceral organs. The fibres are widely distributed throughout the body, and are arranged for a diffuse and non-specific rather than for a highly organized type of discharge. The sympathetic system acts as a whole, leading to the widespread and intense type of action already noted as emotional. Recently experimenters have succeeded in removing the thoracic-lumbar ganglia of cats, which after the operation show no visceral reactions to stimuli usually arousing emotion.

The cranial fibres are less widely distributed and more restricted in their action, allowing changes in a single organ without affecting others. This system governs the normal activity

of the body and acts to regulate it and conserve its energy. The state of the organism under cranial innervation is that of lack of emotion.

The sacral division is connected to the bladder and colon and acts in emptying reflexes. Its rôle in sex is not so clear. In sex excitement it is the sympathetic fibres rather than the sacral that innervate the genitals, although the sacral division has some function in less excited and milder sexual states. This confirms the observation that "sex" and "love" responses are not exactly synonymous. In Watson's "love" response it is probable that cranial and sacral impulses predominate, while in "sex" proper, the innervation is an anomalous combination of the thoracic-lumbar and sacral.

The antagonism of the two main autonomic divisions has important psychological applications. It has long been recognized that "love casts out fear." The soothing influence of stimuli arousing the cranio-sacral division on emotional reactions is seen when fear responses are dispelled by fondling and comforting. That the converse is true is attested by the experience of any psychiatrist. The sexual functions cannot be excited in the presence of fear or anger. Anxiety about sex, setting up a fear state in relation to sexual stimuli, is the cause of psychic impotency or frigidity, a non-organic sexual incompetence. It is overcome by the restoration of the appropriate autonomic reactions.

Recent research has indicated that the *thalamus*, a lower brain center lying below the cerebrum, has much to do with emotional reactions and with pain and pleasure. Parts of the thalamus have long been recognized as primary centers through which all nervous impulses from the receptors pass before reaching the cortex. The lower part, however, functions in the crudest and most protective of such receptor-aroused activities, pain, and also as a mechanism for visceral adjustment. All of the brain above the thalamus can be removed without the loss of emotional behavior. In persons with injuries to the tracts connecting the cortex with the thalamus, sensations are reported as possessing an unusually intense quality, and un-

controlled emotional reactions are common. This is believed to be due to the loss of the restraining influence that the cortex has on the thalamus in normal persons. W. B. Cannon has developed a theory that the "feel" of an emotion is due to the thalamus rather than primarily to the visceral reactions.

The Effects of Emotion. The state of excited emotion has a number of general effects on the conduct of the individual. To some extent these characteristics are directly due to the physiological processes operating; in some degree they represent acquired habits of almost universal occurrence.

Emotional *shock* is the term usually given to a paralysis of rational conduct that characterizes a strong affective state. The period of shock is one of disorganized and fragmentary reaction. The aroused individual is said to "lose his head" or "go to pieces." In this state inhibitory processes are released and persons frequently say and do things that under normal circumstances would be avoided. During emotion suggestibility is increased. Mob actions occur only when the individuals concerned are in an excited state which permits depredations that few would make on calm considered judgment. The physical basis of this upset of rationality is obscure. It is as if the great energy of the emotional response drains that from other pathways, preventing effective co-ordinated action.

Diffusion is another characteristic of emotion. When in an emotional state the individual makes many repeated useless movements. He paces up and down, drums with his fingers, pulls at his hair. Ordinary activity is performed with excessive violence as is shown in stamping, slamming doors and loud speech. The diffusion of emotion is clearly understood as a mass of random responses to the intense visceral tension. Making such responses, or indulging in violent motor activity as by running around the block, aids in reducing the tension by making use of the body's readiness for physical exertion.

The persistent character of emotion is shown in *moods* which are residual emotional conditions. A mood is often set up as a "circular reaction" in which a distress causes thinking about it, the thinking causes further distress, and so on. Moods of

worry are persistent fear reactions. The "black mood" frequently seen is a rage emotion that has found no outlet or solution.

An important emotional phenomenon that assists in explaining many incidents of eccentric behavior is that of *emotional transference*. When a strong emotional state is aroused and remains unexpressed because of inhibition or because of failure to find an outlet, an emotional tension remains. This tension may cause the individual to make a violent response to some trivial stimulus that happens to be presented. An anecdote is told of an office manager who, whenever faced with criticism from his superiors, would find fault with his stenographer's slightest error, and would often discharge her for some petty omission. In this way he completed his pent-up emotional response, originally aroused by a more adequately provoking situation. Similarly, a father who is in a state of suspended emotionality due to some other cause may severely punish his child for a small misdemeanor that ordinarily would have been ignored. Transference has some temporary value in reducing emotional tensions, but accounts for many unfortunate and irrational emotional outbreaks. Whenever an emotional reaction is excessive and inappropriate to the immediate stimulus, one can suspect that some previously unexpressed tension may be at the bottom of it.

Another aspect of emotional transference underlies many prejudices and irrational attitudes. If an individual has habitually been aroused to emotion by some other person or by some characteristic or event, this response will be called forth by similar persons or circumstances that are relatively inoffensive in themselves. For example, an antagonistic attitude toward a certain harsh teacher may transfer to all teachers. Transference often prevents people from taking an objective attitude toward other persons or their problems. This was strikingly shown in the behavior of a college student of the writer's acquaintance. The young man reacted with intense emotion to any indulgence in alcoholics. If any of his friends as much as took a single drink, he went out of his way to de-

nounce them in most emphatic terms. The explanation, known only to a few, was that his father was a drunkard who had treated his mother brutally and finally had deserted her. This type of transference is most unfortunate in teachers, social workers, or employers, who are sometimes prejudiced against an innocent person because of some circumstance in their own past experiences.

Emotional transference may be seen in love or sex behavior as well as in excited emotion. The rejected lover is often "caught on the rebound" by the first attractive and sympathetic person of the opposite sex that is available. In this circumstance he is reacting, because of a persistent emotional state, to a stimulus that hitherto would have been insufficient.

Because of its scope and violence, its disorganized and irrational character, emotion underlies practically all problems of adjustment and is probably the most important concept in this field of study.

SUGGESTED READINGS

The various points of view concerning original nature can be most clearly understood from sources which advocate them. Instinct theories are described in James, *Psychology* (Briefer Course), chap. 25; Thorndike, *Educational Psychology, vol.* 1, *The Original Nature of Man*; and McDougall, *Outline of Psychology*. The reflex theory is stated by Watson, *Psychology from the Standpoint of a Behaviorist*, chaps. 6 and 7. The fundamentals of the embryological approach may be found in Freeman, *Introduction to Physiological Psychology*, chap. 1; Murchison (editor), *Handbook of Child Psychology*, second edition, chap. 2; and Coghill, *Anatomy and the Problem of Behavior*. Holt, *Animal Drive and the Learning Process*, builds a system of psychology on the embryological point of view of the origin of behavior. This last-named book will prove difficult reading for undergraduate students.

As collateral references on the topics of native behavior and emotion, Dockeray, *General Psychology*, chaps. 4 and 6, and Dashiell, *Fundamentals of Objective Psychology*, chap. 8, are recommended.

The physiological changes in emotion are described by Cannon, *Bodily Changes in Pain, Hunger, Fear and Rage*. The relationship of emotion to adjustment problems is shown by Sherman, *Mental Hygiene and Education*, chap. 2 and by Bagby, *The Psychology of Personality*, chap. 3.

CHAPTER III

THE MODIFICATION OF BEHAVIOR

AT BIRTH the infant possesses few, if any, specific and adaptive forms of behavior. From the native irritability and diffuse responsiveness of the fetus have emerged, before birth, only a limited number of sensitivities and reflexes. After birth the human learns not only such things as school subjects and occupational skills, long recognized as acquired, but also his chief adaptive modes of behavior. Personality and character traits, gregariousness, acquisitiveness, a good or a bad disposition, all are learned. Since learning is so universally important in human life, a serious attempt to understand the fundamentals of the process must be made before proceeding further.

THE DEVELOPMENT OF BEHAVIOR

Mass Activity. As the embryological studies previously cited have shown, the individual, in his most primitive form of behavior, acts as a whole. To any kind of stimulation, the organism responds with diffused movements, rather lacking in specificity. This pattern of mass activity is the starting point of the learning process. To the naïve observer the learning of the child may seem to be the addition of reactions, the acquisition of new acts. This is the exact opposite of the actual situation. The infant has too many reactions for a given situation rather than an insufficiency of them. Adaptive behavior develops by the refinement of the total pattern and by the development within it of partial patterns of various degrees of independence.

The Development of Specific Responses. The walking of a child illustrates the nature of the maturation of organized behavior. In early infancy progression movements of the legs not unlike

those later used in walking are distinguishable but are diffused, unco-ordinated and accompanied by other body movements. Walking develops by the growth and strengthening of the body as a whole and by the separation of specific co-ordinated movements from the pattern of total activity. It surely does not appear as a result of the subsequent integration of reflexes which were primarily independent.

The eye-hand co-ordination affords another good illustration. To visual stimulation by a bright object such as a ball the baby responds by general mass activity. He not only makes arm movements, sometimes erroneously (at this stage) interpreted as reaching, but he makes leg, trunk, head and other so-called useless movements as well. In the course of this general activity, he comes in contact with the ball. At this point we may profitably apply the hypotheses of Kappers and Holt already mentioned in relation to the acquisition of the grasping reflex. At the moment that the infant touches the ball, three principal neural circuits are simultaneously active: first, the visual sensory circuit involving the object in the seen position; second, the motor neurones involved in the last made and therefore "successful" movement; and third, the skin and muscle sensory circuits indicating the touching and grasping of the ball, the posture at the time of this act and the immediately preceding movement. These simultaneously active circuits become connected, perhaps, as Kappers has suggested, by the growth of dendrites. A single act does not suffice to fix the newly strengthened neural circuits, but many repetitions, as the eye-hand co-ordination is gradually learned, provide the necessary factor of frequency. It is important to note that the muscular activity involved in this single act may be complicated in the extreme. Reaching for the ball involves trunk, shoulder, head, arm and hand movements. These are learned as one pattern, because of their simultaneous occurrence, not put together piecemeal, as was at one time supposed. Sensory-motor learning as illustrated by this example consists of the orientation of the entire organism in relation to a situation, not of the formation of connections between discrete reactions.

Later, in examining the broader features of the adjustment of an individual to his difficulties, we will return to the concept of learning involving integrated patterns of behavior.

THE CONDITIONED REACTION

Scientific research is often facilitated by the isolation of a specialized and simplified portion of a problem, in which certain fundamental facts can better be detected than in the confused and complex whole. The significance of the *simultaneous occurrence* of reactions which causes them to become related in the emergence of a new behavior pattern has just been illustrated. The effect of reactions occurring together has been investigated by experiments in which the stimuli are greatly simplified and in which attention is directed to the responses of a single muscle group or of a single gland. Much of our knowledge of animal and human behavior comes from such experiments which were begun about 1904 by the Russian physiologist, Ivan Pavlov. Pavlov's work on the conditioned "reflex," or more broadly the *conditioned reaction*, has perhaps contributed more to objective psychology than has any other unified program of research. The fact of the conditioned reaction and its practical application in many situations are as old as civilization. It was by the introduction of controlled and quantitative methods and by carrying the experiments beyond the limits of the obvious first findings that Pavlov made his striking contributions.

Pavlov's Technique. Pavlov, as a physiologist, had long been interested in glands and their secretions. For this reason and because glandular reactions are easily measured, the earliest conditioned reactions studied were glandular, those of the salivary gland being almost universally used. If a drop of weak acid is placed on the tongue of a dog, he will respond with an increased flow of saliva. The acid is, then, an "adequate" or "original" stimulus for the saliva reaction, presumably native. If a bell is rung, the dog will not salivate, since the bell stimulus is not directly connected with the salivary response. The

conditioning process proceeds in this fashion. The drop of acid is placed on the dog's tongue, and simultaneously the bell is rung. This is repeated a number of times, after which it is found that the sound of the bell alone, without the acid, is sufficient to cause a marked salivary response. An originally indifferent stimulus, the bell, has become capable of arousing

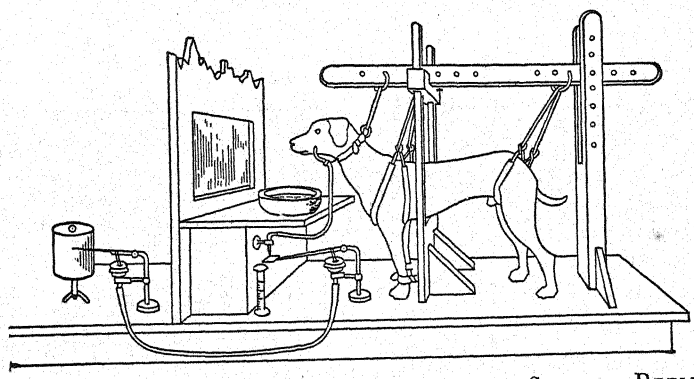


FIG. 8. PAVLOV'S APPARATUS FOR THE CONDITIONED SALIVARY REFLEX

This is an early form of the apparatus, since improved. The saliva flows from the fistula in the cheek to a lever by means of which the drops are counted, being recorded on the revolving drum at the left. The saliva is then measured in the graduate. Food was introduced through the window. (Yerkes and Morgulis, *Psychological Bulletin*, 1909.)

the response, salivation, which it did not elicit before. The response of salivation to the bell is a conditioned reaction.

The experiments of Pavlov were carried out under rigorously controlled conditions, and therein lies much of their value. The experimenter with his dog must not be pictured under the old apple tree, ringing the bell with one hand while he administers the acid with a medicine dropper in the other! Such is not the case at all. Pavlov's laboratories included several soundproof rooms built of turf two feet thick, in which the conditioning experiments were performed. This provision was designed to exclude such interferences as street noise or the clicking of apparatus, which would have had an unfortunate effect on experiments in which a sound was an important factor. In this room, the dog stood on a table, restrained from moving by a light harness to which he was accustomed (Fig. 8). In the dog's cheek a small fistula was cut, through which a tube was

inserted into the opening of a salivary gland. The entire flow of one gland was thereby secured, eliminating any loss by swallowing. The saliva was measured as it flowed from the

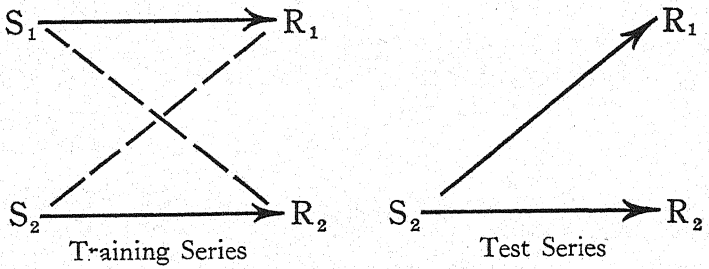


FIG. 9. THE CONDITIONED REACTION

Originally, S_1 evokes R_1 and S_2 calls forth R_2. By the simultaneous occurrence of these reactions, either stimulus becomes capable of provoking the entire response.

dog, both drop by drop by a counting device, and in bulk in a graduated cylinder. In order to eliminate any possibility of the dog receiving cues from the experimenter, the entire pro-

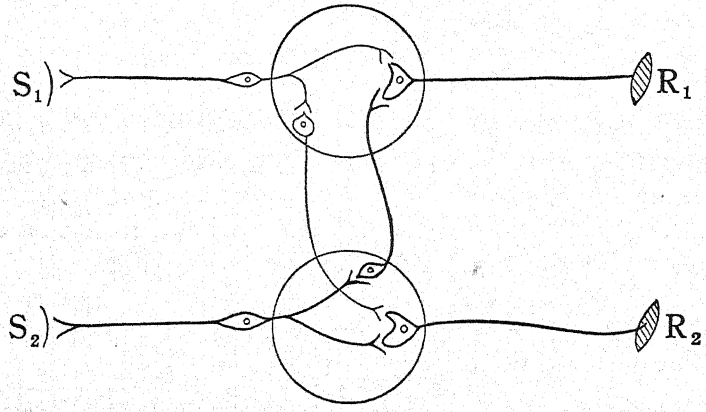


FIG. 10. NEURAL CIRCUITS IN THE CONDITIONED REACTION

The connecting neurones shown complete the neural circuits only after the resistance of the synapses has been reduced, as by neurobiotaxis. The weight of the lines shows the pathways that are conducting. (After Herrick, *Introduction to Neurology*, W. B. Saunders Co., publishers.)

cedure was controlled from the outside of the room by means of electrical and pneumatic conductors.

Analysis of what happens in the conditioned reaction is best effected by diagrams. (Figs. 9 and 10.) The acid stimulus (S_1)

calls forth the salivary response (R_1), the bell stimulus (S_2) originally arouses only R_2, the response of hearing the bell. After many repetitions of these sequences together, the bell stimulus arouses not only hearing of the bell, but also salivation. Some neural principles by which conditioning may be explained have already been met. The first is that of diffusion of stimulation throughout the nervous system. The branching structure of neurones is imperfectly insulated, and pathways, though they may be very rudimentary, weak and indirect, exist from all sense organs to all effectors. These weak paths are indicated by the dotted lines between S_1 and R_2 and between S_2 and R_1. If these potential pathways did not exist, conditioning would be impossible. The second principle is that adjacent, simultaneously active circuits tend to be joined functionally. Kapper's law of neurobiotaxis (see p. 38) affords as good a picture of the process as can be seen at present. The adjacent, simultaneously conductive neurones tend to be joined by a growth of dendrites. The identical processes by which specific behavior is formed before birth undoubtedly operate in learning after birth. Growth of behavior and learning are exactly the same phenomenon.

A number of objections have been made to Pavlov's description of the conditioned reaction. The most common criticism is of the statement that the two stimuli, the food and the bell, have become "associated." Such an interpretation is of course a serious error. It is the reactions which have become associated with the stimuli, rather than the stimuli themselves having become connected. Another objection is that Pavlov's technique ignores one of the two responses concerned, the original response to the bell. If the dog, before the experiment, reacts to the bell by turning its head, pricking up its ears and so on, this reaction undoubtedly becomes conditioned to the acid, just as the salivation does to the bell. The conditioning works both ways. Further experiments which used two simultaneous stimuli each of which provided a marked response, such as the wink and knee-jerk reflexes in humans, have shown that after the training is complete, *either* stimulus elicits its own

reaction and that of the other stimulus as well. This has led to the statement of the conditioned reaction in these terms: a *part* of a former complex stimulus may call forth the same *whole* response as had previously followed the total stimulation.

Human Conditioned Reactions. That the conditioned reaction is not a type of behavior characteristic of lower animals alone is shown by numerous experiments with human subjects. The salivary reflexes of children have been conditioned to a variety of stimuli. Mateer, using the rate of swallowing as a measure of salivation, chocolate placed in the mouth as the original stimulus, and pulling a bandage over the child's eyes as a conditioned stimulus, set up conditioned reactions in children in eight or nine repetitions. An interesting incidental finding of this experiment was that normal children were conditioned more quickly than were a number of feeble-minded children. Apparently, the differences in neural modifiability which exist between bright and stupid persons hold for the simplest kind of learning as well as for more complex forms. A valuable technique for demonstrating the conditioned reaction in adult humans is that employing a severe electric shock as the original stimulus and the resulting involuntary breathing changes as the original response. If a bell is rung simultaneously with the administration of the shock for a number of trials, the subject comes to gasp when the bell is rung alone. Other conditioned reactions have been set up in humans involving glandular, visceral and muscular responses, and also in those more complex activities usually called perceptual and ideational processes.

Conditioned Emotional Reactions. A striking practical application of the conditioned reaction concept has been in explaining the acquisition of emotional reactions to various stimuli. It has been stated before that adults frequently fear animals, the dark, or crowds, and that in less frequent instances they fear small enclosed places, running water, eyes, and a host of other irrelevant stimuli. Since these fears are never seen in tiny children, they are certainly not instinctive and must therefore have been learned. The classical experiments in the con-

ditioning of emotional reactions were performed by Watson and Raynor in 1921. Typical of these experiments was that with the child Albert, an eleven-month-old infant, the son of a wet-nurse attached to the Johns Hopkins Hospital. Albert, having never been outside of the hospital, had been reared in an extraordinarily well-controlled environment. It was quite certain that, up to the beginning of the experiment, he had never seen an animal. When tested at the outset Albert was found to have only positive, approaching responses to animals such as rats, rabbits, cats and dogs. The only tested stimuli which elicited fear were loud noises and loss of support. Watson conditioned the child to fear a rat by presenting the adequate stimulus, the loud noise, simultaneously with the rat's appearance. The loud noise was made by striking an iron bar with a hammer. Watson describes his results as follows.[1]

> Eleven months, three days old. (1) White rat suddenly taken from the basket and presented to Albert. He began to reach for rat with left hand. Just as his hand touched the animal the bar was struck immediately behind his head. The infant jumped violently and fell forward, burying his face in the mattress. He did not cry, however.
>
> (2) Just as his right hand touched the rat the bar was again struck. Again the infant jumped violently, fell forward and began to whimper.
>
> In order not to disturb the child too seriously no further tests were given for one week.
>
> Eleven months, ten days old. (1) Rat presented suddenly without sound. There was steady fixation but no tendency at first to reach for it. The rat was then placed nearer, whereupon tentative reaching movements began with the right hand. When the rat nosed the infant's left hand the hand was immediately withdrawn. He started to reach for the head of the animal with the forefinger of his left hand but withdrew it suddenly before contact. It is thus seen that the two joint stimulations given last week were not without effect. He was tested with his blocks immediately afterwards to see if they shared in the process of conditioning. He began immediately to pick them up, dropping them and pounding them, etc. In the remainder of the tests the blocks were given frequently

[1] Watson, J. B., *Psychology from the Standpoint of a Behaviorist*, pp. 232–233, J. B. Lippincott Co., 1924.

to quiet him and to test his general emotional state. They were always removed from sight when the process of conditioning was under way.

(2) Combined stimulation with rat and sound. Started, then fell over immediately to right side. No crying.

(3) Combined stimulation. Fell to right side and rested on hands with head turned from rat. No crying.

(4) Combined stimulation. Same reaction.

(5) Rat suddenly presented alone. Puckered face, whimpered and withdrew body sharply to left.

(6) Combined stimulation. Fell over immediately to right side and began to whimper.

(7) Combined stimulation. Started violently and cried, but did not fall over.

(8) Rat alone. The instant the rat was shown the baby began to cry. Almost instantly he turned sharply to the left, fell over, raised himself on all fours and began to crawl away so rapidly that he was caught with difficulty before he reached the edge of the table.

In seven combined stimulations a very strong fear of rats had been conditioned. Watson suggests that with more intense stimulation or with a child more sensitively organized (Albert is described as "phlegmatic") the reaction might have been conditioned in one or two trials. Cases are known in which this has certainly occurred. Further experiments showed that the conditioning was retained over a period of five days without appreciable loss of intensity and that it spread to all furry animals. Although the child was conditioned only to the rat, it now feared a rabbit, a dog, a fur coat, a bundle of cotton wool, and even the whiskers of a Santa Claus mask.

The conditioning process by which fears are learned in ordinary life situations is exactly the same psychologically, but is less easily analyzed than in the laboratory experiment. A young woman fears dogs, even though she recognizes the fear as groundless and attempts to overcome it. Investigation shows that her mother before her feared dogs. When in childhood this individual approached a dog, her mother would loudly call her away. "Get away from that dog," or "Look out or he will bite you," she was told. The parental warning

and the example of the mother's fear caused a strong avoidant reaction, which became conditioned to the sight of the dog. Similar accounts could be made of the origin of fears of mice, rats, snakes, of strangers, of the dark, and of other situations commonly feared by many persons.

Characteristics of Conditioned Reactions. It is apparent that there need be *no logical relationship* between the substitute stimulus and the response to which it has been conditioned. Nothing could be more logically absurd than for the dog to salivate on hearing a bell. Many human fears are equally ridiculous, and greatly mystify the observer unacquainted with the findings of the psychological laboratories. If two reactions occur together, they *must* become associated. This associational imperative is stronger than all logic in determining the behavior of organisms.

A conditioned reaction *does not depend on conscious processes* or on any act of deliberation. The naïve observer of a conditioned reaction in a dog is likely to say that he hears the bell, and therefore "expects" the food. The child is, by this type of explanation, said to "remember" the association of the animal with fear, and thereby shows fear on presentation of the substitute stimulus. Nothing of the sort need take place. It is ridiculous to imagine that the dog says to himself, "I hear the bell, so the food must be coming, and I guess I'll salivate." The salivary reaction is not controllable by conscious processes even in humans who can make such an elaborate introspection, much less in dogs. The most definite evidence of the absence of voluntary control or conscious process in conditioned reactions is found in Hulsey Cason's work on the conditioning of the pupillary reflex. An increase in the light falling on the retina causes a contraction of the pupil; a decrease causes a dilatation. This is a reflex almost totally independent of voluntary control. It is impossible ordinarily to regulate the size of the pupil by thinking about it. The sound of a bell, of course, has no appreciable original effect on the pupillary reflex. Cason sounded a bell and simultaneously reduced the light intensity causing the pupil to expand. With other subjects, he

reversed the procedure, sounding the bell as a contraction of the pupil was being elicited by increased light intensity. In both cases he secured conditioning. After about four hundred repetitions, the sound of the bell alone would stimulate a change in the size of the pupil. This reaction is a very completely unconscious one. Not only is it independent of volition, but even the fact that the reaction has occurred may be unknown to the subject. The conditioning was achieved with some subjects who were not informed that the experiment concerned the pupillary reaction at all. This conditioning of an "unconscious" reaction is not a mysterious event; it is of most simple nature. By simultaneous stimulation the subject has been made to react to a stimulus which was hitherto inadequate. The subject simply responds to the stimulus, without necessarily deliberating, thinking or remembering.

This experimental finding has important applications. The child who fears the rat need not remember the experience by which he was conditioned. In many recorded cases of absurd fears, the conditioned reaction persists, while remembrance of the conditioning episode is forgotten. The same is true of some very common habits. You react to the stimulus "eight times seven" by saying "fifty-six," but you need not remember the childhood experience by which you learned this response. The naïve postulatation that reaction necessitates memory has led to such fictions as that of "unconscious" memory which have hindered scientific research in the field of mental abnormalities.

Conditioning *may affect sensory qualities* as well as reactions. A typical case of this occurred in the experience of the writer. An injudicious grandparent gave me, at the age of about ten, a dose of castor oil which was mixed with the syrup of canned peaches, supposedly to make the medicine more palatable. Severe nausea resulted. For ten or fifteen years after this event, I suffered an overwhelming aversion to canned peaches. Not only was an avoidance response set up, but the syrup actually tasted like castor oil. The sensory quality itself had been conditioned.

Volition and the Conditioned Reaction. It has been stated that the conditioned reaction does not depend on deliberation or any other "higher" mental function. Indeed, a recent experiment seems to indicate that voluntary control of an act is acquired by a process of conditioning. C. V. Hudgins (1933) conditioned the pupillary reflex to the sound of a bell, using Cason's procedure. Then he extended the experiment first by having the subject press the key ringing the bell, at a verbal command of the experimenter, and second by eliminating the bell entirely, leaving only the verbal command as conditioned stimulus. The conditioning was retained under these arrangements and the subject would contract his pupils at the spoken word. Finally, the subject was made to give the command himself, vocally or *subvocally*. Dilatation or constriction of the pupil could be conditioned to these *self-initiated stimuli*. The subject now has "voluntary" control of a reflex that was hitherto uncontrollable. All he has to do is to *think* the right word and his pupils react. Moreover, the conditioning to the verbal stimuli was more permanent than conditioning to the bell. In this experiment we have a glimpse of the origin of volitional action. It is probable that all voluntary acts become subject to control because they have been associated with a subvocal verbal representation ("thought") of the performance.

Getting Rid of Conditioned Reactions. Since the conditioned reaction pattern is so imperative, the question may arise as to why human behavior is not cluttered with a vast number of useless and annoying responses which have been acquired through simultaneous stimulation. Fortunately, most conditioned reactions require repetition before they are learned, and are extinguished by *disuse*. If a reaction is set up in a dog, and then tested at various intervals of time, it will be found gradually to weaken, and at length to disappear. It is, of course, a truism that we forget the reactions which we fail to use, practice and review. There are, however, some exceptions. If the reaction is very strongly conditioned either because of great intensity of a single experience or of a small number of

experiences, or because of a great number of repetitions, it will be relatively proof against the mere ravages of time. In such a case a definite technique for removing the reaction is needed.

Pavlov noted that if he sounded the bell a great many times in succession, the salivary response would gradually diminish in quantity and finally disappear. To avoid this extinction the reaction had to be *reinforced* from time to time by giving the acid stimulation with the bell. The removal of a response by the unreinforced repetition of the substitute stimulus is *experimental extinction.* We are reminded of the boy who cried "Wolf!" when there was no wolf. The response to his cries was quickly extinguished. This technique gives a clue for the cure of conditioned fear reactions in children. Mary Cover Jones removed a fear of animals from a child by introducing a rabbit into the room while the child was eating. Each day the rabbit was moved a little closer until the child would tolerate its presence complaisantly. With one case the experiment received a severe set-back when a child was scratched by the rabbit, thereby giving reinforcement to the fear. Gradually, however, the fear was extinguished by repeated contact with the rabbit without a normal stimulus for fear being present. The process was a slow one, forty treatments over a period of many weeks being necessary to counteract the conditioned fear response that was probably learned in one experience.

Dr. Jones used another technique besides experimental extinction in *associating the stimulus with an antagonistic reaction.* The rabbit was introduced while the child was eating, a most satisfying form of activity. Petting the child while the rabbit was present also tended to extinguish the fear. This is an excellent procedure, but calls for good judgment on the part of the experimenter. If the child is permitted to have too strong a fear reaction while eating, the association may operate in the undesirable direction and he may come to fear his food. Petting to alleviate fear is also a good device when used in moderation, but may train the child to seek sympathy at every slight injury, if too freely employed.

INHIBITION

The more elementary conditioned reaction experiments concerning the acquiring of responses by simultaneous stimulation and their loss by disuse and extinction, have presented no startlingly new concepts. They are simply common sense made exact and quantitative. Much of the value of Pavlov's work lies in the fact that he did not stop here, but investigated other related phenomena that never would have been known without the use of precise methods. These more complicated experiments offer several concepts of great value in the study of behavior adjustments.

Time Relations. Up to this point, the conditioning process has been spoken of as involving the simultaneous presentation of two stimuli. What will happen if the stimuli, such as the acid and the bell, are not presented together, but are separated by an interval of time? Several of Pavlov's most significant experiments deal with this point. If the adequate stimulus (acid) is given first, and the inadequate stimulus (bell) is given after an appreciable lapse of time no learning occurs. One of Pavlov's associates (Krestovnikoff) reported an experiment in which a substitute stimulus of a scratch on the skin was given from one to three seconds *after* the food stimulus. In one thousand trials no positive results were secured. This is not an undisputed point, however. More recent experiments by Beritoff and by Switzer contradict Krestovnikoff's results and show that conditioning can be achieved with the backward order of stimuli, providing the motor outflow to the response to be conditioned has not ceased. With human beings, we are safe to make the claim that the presentation of the old stimulus before the new one does not lead to efficient conditioning. It is, for example, a poor training procedure to reward a child before the performance of the act to which the reward applies. It is better to give the reward simultaneously or soon afterward.

If the new stimulus precedes the adequate stimulus, conditioning can be achieved. The conduct of this experiment by Pavlov's technique is as follows. The bell is rung and con-

tinues ringing; then after one minute the drop of acid is placed on the dog's tongue, and he reacts by salivation. This procedure is repeated for a sufficient number of times as a training series, and the dog comes to react to the bell alone. He does not begin to salivate as the bell begins to ring however, but one minute afterward! This is known as the *delayed reaction.* (Fig. 11.) A dog is no chronometer, and does not time the

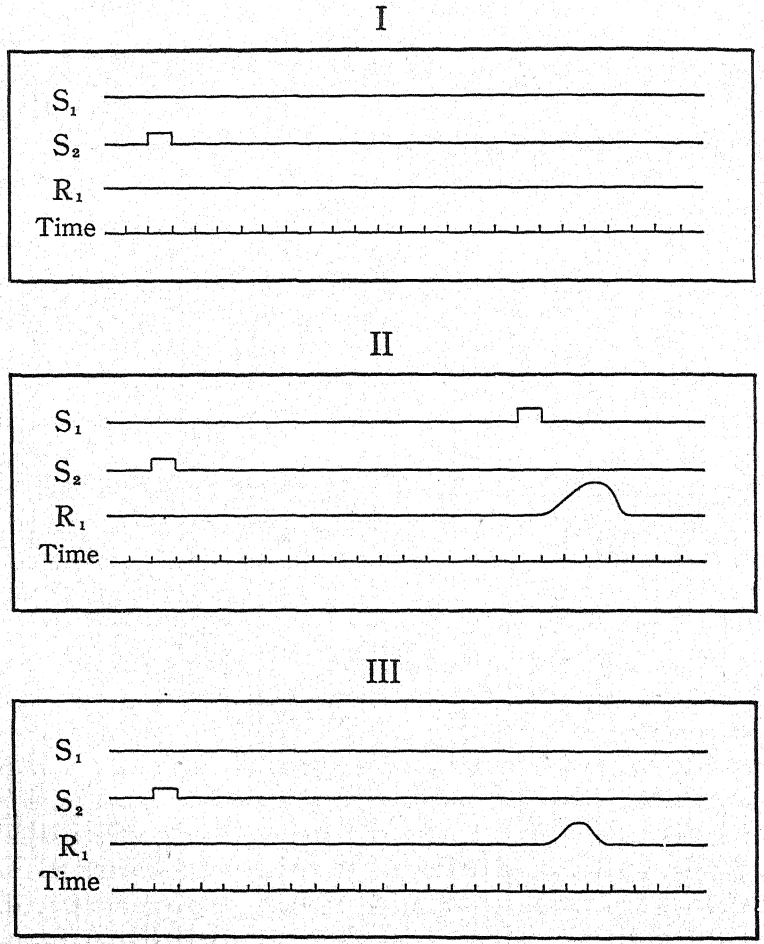


FIG. 11. THE DELAYED CONDITIONED REACTION

Diagrammatic, but illustrating the usual results of experiments. S_1 is the original stimulus, S_2 the substitute stimulus and R_1 the response under observation. I indicates the lack of response to S_2 before conditioning. II shows the conditioning process. III indicates the delayed response to S_2.

delay interval to the precise thousandth of a second, yet he is surprisingly exact. In general, if the substitute stimulus precedes the adequate stimulus in the training series by a certain interval of time, then when the substitute stimulus is given, the reaction follows after that same interval. Delay intervals as long as five minutes have been successfully used with dogs, and even longer intervals with children. It has been noted that in the delayed reaction the substitute stimulus continues operative throughout the delay interval. Other experiments were performed in which the bell was sounded once, and the delay interval was one of silence. In this case conditioning occurred, but the response was so weak that Pavlov gave to it the name *trace reaction*. The trace reaction differs from the delayed reaction only in lack of continuous presence of the conditioned stimulus, and in the less intense response resulting.

Inhibition. There are many indications that the latent period of the delayed reaction is not merely passive, but involves an active restraining of response on the part of the animal. This active restraint is called *inhibition*. The most striking evidence of the active nature of inhibition is that any extraneous stimulus will release it, and the response will be made at once. If during an inhibition period a loud noise, itself not a conditioned stimulus, is made, the inhibition is lifted and the dog salivates at once. In one case in Pavlov's laboratory the buzzing of a fly, and in another case a strong extraneous odor, were sufficient to precipitate the response. Such a stimulus is said to *inhibit the inhibition*. Practical examples of this type of behavior are numerous. A young woman is responding by intense grief to the death of her father. She inhibits the outward reaction, however, and goes to her work as if nothing were disturbing her. At a critical word from her employer, however, she bursts into tears and displays all the signs of grief. Her colleagues say that "her nerves are shattered," but experimental psychology offers a simpler and less mysterious explanation. The extra stimulation of the scolding has inhibited the inhibition. Many important human learnings

are the learning of inhibitions. In training the excretory responses of young children, for example, inhibition is set up against release except under proper circumstances. In excitement, even the rather well-trained three-year-old may wet himself. Here again is an illustration of extraneous stimulation interfering with the inhibition.

Irradiation and Differentiation. Newly learned conditioned reactions are not specific. If the dog is conditioned to respond to a bell of pitch A, he will also respond to bells of pitch B, C, or D, quite indiscriminately. A similar *irradiation* was observed in Watson's experiment. Conditioned to fear the rat, the child also feared all other animals and furry things. The reaction tends to be made to the class of stimuli, rather than to the exact one used in the training.

Differentiation, however, can be achieved. If the bell A is repeated again and again always accompanied by the adequate stimulus, and bell B is repeated without the acid ever being given with it, the response to A will be strengthened and that to B will be weakened. Eventually, the dog will react to A, but never to B. This procedure places in the hands of animal psychologists a powerful tool for investigating the sensory discriminations of animals. Pitch discrimination in humans can be studied by having the subject report which of two tuning forks is of higher pitch. If an individual can correctly select the higher of two tones of 256 and 257 vibrations, in a great majority of a number of trials, we know that he can make the discrimination of only one vibration difference. Many, though not most, humans can make this fine distinction. Bieliakoff conditioned dogs to differentiate between tones of 800 and of 825 vibrations, and when this was achieved between frequencies of 800 and 812, though this sequence could not be accomplished in the opposite order. Other experimenters determined that a dog could distinguish between two points on the flank only four millimeters apart, between a metronome rate of 96 and 100 beats per minute and between the visual presentation of a circle and that of an ellipse whose axes were as 7 to 8. If the distinctions became finer than these the dog's

differentiation broke down and he salivated indiscriminately for either stimulus.

Is the response to the discriminated stimulus extinguished or inhibited, that is, does it die out or is it actively restrained? The evidence is in favor of *inhibition*, at least in the case of the finer differentiations. A further type of experiment indicates this clearly. A dog is conditioned to salivate at the stimulus of touching a point X on his flank, by applying this touch simultaneously with the presentation of food. If a near-by spot Y is now touched, typical irradiation is noted, as Y will also elicit salivation. Training in discrimination is next carried out, stimulating X frequently with the original stimulus, and stimulating Y without reinforcement. Differentiation occurs, and the dog will salivate for X but no longer for Y. X may now be termed a positive spot, Y a negative spot. Two important observations may now be made. If Y is stimulated and then X, no salivation occurs! This is described as *spread of inhibition*. So active a restraining process is set up by touching the negative spot, that an immediately subsequent positive stimulation does not overcome it. A further observation is that if Y is touched, and immediately afterward a strong extraneous stimulus, as a loud noise, is introduced, copious reaction will be made at once. This is exactly the same as the inhibition of an inhibition previously noted. Discriminative reactions, therefore, involve active inhibition of the response to the discriminated stimulus.

Orderly human conduct depends in large degree on correct inhibitions as well as on correct reactions. Under conditions of excitement or strain (overstimulation) the inhibitions disappear, and disorganized conduct is the result. This is illustrated by those countless situations in which in popular terminology, people are said to "lose their heads" or "go to pieces." The enraged office boy hits the boss and loses his job. The novice driver, confronted by a perplexing traffic situation, steps on the gas instead of the brake, a clear case of failure of differentiation, and wrecks the car. The harassed business man, on the brink of failure, has a "nervous breakdown." All these may be seen to involve failures of inhibition.

Conditioned Inhibition. Another experimental phenomenon closely related to discrimination was termed *conditioned inhibition.* If a conditioned stimulus to which the dog will salivate, such as a bell, is presented several times in succession simultaneously with a strong light, but without the acid, the response will die out and disappear. Now the dog will salivate for the bell alone, but not for the combined stimulation of bell and light. This is simply another aspect of differentiation. "Bell alone" is one stimulus and "bell plus light" is another stimulus, and the two are discriminated by the usual procedure. The discrimination is destroyed if a third stimulus, especially if it is an overviolent one, is introduced. The conditioned inhibition is thus subject to disinhibition as are all other inhibitory states.

Conditioning Under Strain. When an individual is in a state of strain such as that of strong emotion, the general inhibitory processes are at low ebb and he is likely to become conditioned to stimuli of a petty or irrelevant nature which would have been ignored under normal circumstances. This is well illustrated by Morton Prince's famous case of a young woman who suffered an uncontrollable fear of church towers and of church bells. She was unable to give any explanation of this peculiar phobia, but at length the psychiatrist by the aid of special techniques unearthed a memory of an event of her childhood which had caused it. The girl's mother had undergone a serious surgical operation while at a health resort recovering from a severe illness. The girl felt guilty concerning her mother's condition, feeling strongly though unwarrantedly that her lack of care had caused the mother's turn for the worse. The mother died. While waiting for several days, uncertain of her mother's fate and in a tremendous state of anxiety, the girl had lived in a hotel room. Across the street was a church tower with a chime clock, whose bells rang every quarter hour. As a result of the girl's disorganized state, an unusual conditioning was made between the stimulus of the bells and her response of fear, guilt and anxiety. So strong was the conditioning that it persisted for years, and the sound of any church bells or even the sight of a steeple would reinstate the response of fear.

Thus she came to hate and avoid the stimulus of church bells. This conditioning would not have occurred under ordinary circumstances, but with inhibition removed by the general physiological strain of great anxiety, differentiation was not achieved, and the girl reacted to any church bells with the full intensity of the original experience.

The most general implication in this case is that the state of the organism has a great influence on what behavior will be acquired in a given situation. With one individual in a certain physiological state, with certain past experiences, or with certain other stimuli operating, a conditioning will occur which would not operate in another individual who approaches the situation with a different past history or in a different physiological or psychological condition. These differences are *personality differences*. The nature and origin of personality traits will be considered later.

SYMBOLIC PROCESSES

Symbols. In the common and dictionary senses of the word, a symbol is some object that typifies or represents some other object, event or quality. A flag is the symbol of a country, a word is a symbol of the object for which it stands, a certain facial expression is the symbol of some state of emotion. The efficiency of human activity as compared to that of lower animals is very largely due to the more extensive use of symbols such as those of maps, diagrams, mathematics and above all of language. The valuable process of thinking may be shown to be a matter of the manipulation of symbols. Symbols, of course, are learned. To investigate their source and use is a necessary aspect of the study of learning processes.

Symbols may appear in *expressive*, *manipulative* or *communicative* rôles. Expression is the simplest development of symbolism. A child may react to thwarting by an intense and complete emotional reaction. In an adult this response is reduced to such expressions as pouting, frowning, exclaiming or grunting. These symbols may have purely personal value, not

being performed for their effect on others. Manipulative symbolism is shown in all processes of problem solving, using words, mathematics or more subtle signs such as subvocal speech or gesture. Not only are schoolish problems attacked by the use of symbols but all difficulties of everyday life, from the most trivial to the most grave adjustments, necessitate the use of these indicators in some form or other. The communicative use of symbols is early learned by the child when some particular cry or gesture is followed promptly by the satisfaction of an organic need such as hunger. This cry becomes not only the expression of the need, but also a step in the direction of satisfying it. It is probable that language symbols are more used by children and adults to arouse other persons to do things than for any other purpose.

The Origin of Symbols. To discover the sources of symbols does not require the formulation of any new psychological principles. The conditioned reaction represents one of the simplest cases of symbol formation. The dog reacts to the bell as it did to the acid, hence the bell is the symbol of the acid, the representative cue for behavior. Other symbols are learned by exactly the same process. If one wishes to teach a dog to sit up at a verbal command, he is stimulated with the words "sit up" simultaneously with some other stimulus which would normally bring this response, such as holding a piece of meat above his reach. A child learns the meaning of words by hearing the word while reacting to the object, event, or relationship which the word means. The word thereby becomes a substitute stimulus for all of the reactions which the object itself would call forth, and these reactions constitute the *meaning* of the word. Discrimination, inhibition, and other phenomena of the conditioned reaction operate in the case of words in the same manner as with other stimuli. Differentiation is especially clearly seen in the child's learning of new words. Having learned "doggie" in connection with a furry animal, all furry animals and even fur coats become "doggie," a typical spread of conditioning. With further training discrimination is achieved and the symbol-response is now made only to its

proper object, the dog. The inhibitory power of words in the form of commands, rules, and laws needs no extended description.

Symbols operate not only as substitute stimuli but also as substitute responses. If a dog is led to the kitchen every time he is hungry, he comes to run to the kitchen whenever stimulated by hunger pangs. Similarly if performances of scratching on the door or sitting up to beg have been simultaneously performed with the organic state of hunger, these become accustomed responses to the condition, and hence symbols of hunger. The dog thus uses symbols, a sort of language, as well as responding to them. A well-trained animal's repertory of symbols is very extensive and it is incorrect to say that he understands more than he can express.

A general principle concerning the operation of symbols that is especially useful in describing the intricate responses of human beings is the *law of redintegration*, as described by H. L. Hollingworth. Redintegration is the process in which a *part* of a complex antecedent provokes the *complete consequent* that was previously made to the antecedent as a whole. The conditioned reaction is a simple example of redintegration. To the complex stimulus (antecedent) of acid plus bell the dog has repeatedly reacted by the total response (consequent) of salivating and pricking up his ears. Now he acts *redintegratively* in that a part of the antecedent, the bell, evokes the entire consequent. In more abstract terms, if a complex situation ABC has aroused an activity XYZ, the recurrence of a part of the situation, say C, is sufficient to call up the XYZ. This may occur in some cases, even when C is in quite a different setting from its original one, AB.

In human experience almost every event becomes, through associative learning, a sign or cue or stimulus for the behavior which this event previously elicited in a complex setting. Redintegration operates in relation to verbal, muscular, glandular, or visceral responses. The photograph of a person calls up the name of the person, incipient muscular attitudes of approach or withdrawal which were habitually made to the

person, and appropriate emotional states as those of love or fear. Redintegration is the basis of the value of souvenirs and keepsakes, for these tend to arouse the same attitudes as were originally connected with the experiences to which they pertain.

Symbols in Recall. The consideration of redintegration brings us very near to the problem of memory. What happens when you remember a dentist's appointment, or what you had for dinner yesterday, or the house in which you lived as a child? A definition of memory as the reinstatement of past experience is a very incorrect one. Past experience is past, and it is as impossible to bring it into existence again as it would be to reassemble the actual food that you ate yesterday or to recall into existence a house that has been torn down. Memory is a present response bearing relationship to the past because its stimulus was formerly part of some previous total situation. Hollingworth has very penetratingly suggested that the term "recall" is very apt in relation to memory, for in remembering a thing we re-call it, that is, we name it again. We speak or imagine some word, symbol, or other stimulus, which was part of a total situation which arose in the past. This symbol acts redintegratively to evoke the response which was formerly made to the entire past situation. Nothing is ever remembered without a present sign. There is always some present stimulus which arouses a response determined by past experience. The present symbol may be very gross and obvious or it may be very subtle and difficult to identify. You may recall the dentist's appointment by seeing a memorandum on your calendar or by a twinge of pain from the ailing tooth, or you may recall it in the medium of the sight of a person hurrying or in the smell of an antiseptic or by looking at your pocketbook. Whether gross or subtle the psychological process is the same. You react to a *present cue* in a manner *determined by the past history* of your nervous system.

Recall can be in other symbols than words. The individual may give a report of his reminiscences in words for the benefit of others or in implicit language for himself alone. Or, the recall may be in the form of gestures, attitudes, muscular

postures, or visceral states, some of which are quite impossible for the outside observer to detect. The physical basis for remembering is, of course, the same as for any other stimulus-response activity. If the stimulus for a reflex is presented, the response is made because of certain canalized patterns in the nervous system. Similarly a cue or symbol stimulus arouses, through a neural pattern, the responses which constitute recall.

Symbols in Thinking. Symbols act as convenient short cuts in thinking. In an algebra problem, x may stand for the amount of lead in a certain alloy of lead and tin. In the solution of the problem the x is freely used, often without verbalizing the longer phrase that expresses its entire meaning. The result is an economy of time and effort and an added efficiency, since many problems cannot be solved at all without the use of some kind of symbolism. Thinking, in this abstract form, *is* the manipulation of symbols, and nothing else.

Common problems of ordinary living usually involve more subtle symbols. If a man is in uptown New York and wishes to go downtown, he may think or reason as to the best method of transportation. The subway is the fastest but the station is a long way distant from the starting point. The surface cars are too slow to insure his keeping his appointment. The elevated railway, although less fast than the subway, is more conveniently located, so he decides on this last solution. The man arriving at this decision does not physically take all three routes in order to settle his difficulty. He uses symbols of some sort as his tools of reasoning. These may be words or whole sentences spoken aloud, or may be words incipiently pronounced, possibly with barely perceptible movements of the larynx of which he is not clearly aware. Or the symbols may be still more abridged. An inclination of the head may mean the subway, a gesture of the shoulders the elevated and a grunt imply the surface cars. In any case, thinking is no mysterious inner process. It does not lie out of the realm of physical events, but consists of responses to more or less delicate symbols.

If an individual is drowsy, excited, preoccupied with other

processes or in certain states of severe maladjustment, the symbols he uses may become mixed or distorted, and apparently unconnected with the business at hand. Two cases of the operation of irrelevant symbols in conditions of drowsiness or fatigue illustrate this.

(*a*) Observer played checkers nearly all day on ocean liner. "Retiring to the cabin before sleeping-time, I threw myself drowsily on my berth and fell to ruminating over some projected experiments on the comic, wondering whether to follow the order of merit method or a method of assigning numerical grade to each comic situation. I decide, but in my half-awake consciousness both the deliberation and the decision take the form of moves of checkers on the board. I decide to move my white man up to the king row and mentally watch C—— jump it with his black."...

(*b*) "On board steamship, dressing for dinner in suit purchased abroad. Sitting drowsily on edge of berth and thinking that the suit had turned out to be a bad investment and had been forced upon me by a tricky salesman. Planning to buy cloth abroad this time to be made up in U.S., and wondering if it would pass customs. Thought over the conversation with the salesman and suddenly noticed that the rush of water, heard through the porthole, had become transformed into the voice of the salesman, trying to sell me the suit. Fall to musing in the process, wondering, while he talks, at his husky voice and why he has no more inflection." [2]

In both of these instances perfectly rational thought processes are occurring, and the conclusions are valid. The symbols are derived, however, from irrelevant sources. In the first case the symbols are a perseveration of an immediately past experience, in the second they are a present perception.

Symbols in Dreams. The study of the distortion of symbols when in a drowsy state leads directly to the question of symbols in dreams. Dreaming is not an occult phenomenon, but is always a process of thinking, in the broadest meaning of this term. Some dreams are reminiscences in which the dreamer mulls over the events of the past day. Other dreams are of a problem-solving type, the subject being engaged in finding his way out of a difficulty, either constructively or in a non-

[2] Hollingworth, H. L., "Vicarious Functioning of Irrelevant Imagery," *J. Phil., Psychol., and Sci. Meth.*, vol. VIII, no. 25, pp. 688–692. 1911.

adjustive, worrying manner. Dreams may also express aspirations or desires, just as the better understood daydreams do. In other instances dreams may be simply the result of present stimulation as by a stomach ache. The interpretation of dreams is the determination of what experiences they reproduce or what problems they concern. This can be effected only with the dreamer's waking assistance. Illustration will portray the rôle of symbols in dreams more clearly than will definition.

The dreamer is a male college student. "I seem to be standing on a street in W——, near the principal corner, with a group of unidentified people. In the group are one or two familiar young women, and I am trying to speak to them without interrupting the others. One of the young women leaves the group. I identify her now as Peg G—— and follow her running. As I am nearing the corner, a cut-down Ford comes around the turn, loaded with young people from P——. Following the Ford are two street cars, also loaded with merrymakers. Then an ox-cart, drawn by five oxen, crowds between the cars, obstructing my passage. At the risk of being run down, I push past the ox-cart and try to overtake Peg, who is well down the street by this time."

This dream is silly and meaningless to the dreamer and unintelligible to the psychologist, until by questioning, the background is ascertained. A crucial point is the identity of Peg G——. The subject remembers her as a girl whom he once invited to a college dance. He and Peg quarreled throughout this social function, and thereafter regarded each other with mutual dislike. Recently the student had heard that Peg was studying painting in New York. The student has recently been escorting another girl who was also an art student. The progress of this relationship has been unsatisfactory, the student feeling that he lacks the sophistication and social graces of this girl's other companions. In his own words, he is too "slow" for her. The meaning of the dream is now apparent. Peg G—— symbolizes the other girl because of two very obvious relationships, her course of study and the unpleasant

social relationship. The ox-cart by a very commonplace figure of speech is a symbol of slowness. This personal defect keeps the dreamer from the girl and interrupts his pursuit of pleasure. The "slowness" gets in the way of the "merrymaking."

Symbols in dreams, while distorted, are derived in the same way as are more rational waking symbols. Aristotle, 2300 years ago, in formulating his *laws of association* noted that ideas (symbols) tend to be associated when they were *similar*, or when they were strikingly *contrasted* or when they had *occurred together* in the individual's experience. These ancient principles are still useful in describing the operation of symbols in remembering, in thinking or in dreaming. All three are, however, reducible to one law. In the first place, similarity and contrast are really the same thing, for to be opposites, events must have an essential likeness. One would contrast north and south or a wheelbarrow and an automobile, but comparing north with a wheelbarrow makes no contrast! North and south, while opposites, are really the most *like* entities imaginable. Similarity, in turn, can be shown to be an aspect of occurrence together. Events that are similar possess *identical elements*. If one event is ABN and another is ABQ, these events are similar because of their partial identity of content. But this identity consists of the simultaneous occurrence of the common elements. A house is like a barn because certain factors occur together in the two. Similarity therefore reduces to the third principle. Occurrence together is, however, the basis of redintegration and of the conditioned reaction. Aristotle's laws of association are seen to be nothing more than variations of the universal law of learning hitherto considered. The basis of these associations is therefore the same as that of all symbols.

Certain systems of dream "interpretation" have made use of fixed symbols, that are supposed to have the same meaning whenever or by whomever dreamed. This is in large part a baseless superstition. Of course persons who speak the same language and who have had similar experiences may frequently hit upon identical symbols in dreams, just as they use like expressions in everyday life. But beliefs that dreaming of a

black dog indicates bad luck (Gypsy dream books) or that all dream symbols are sexual (certain psychoanalysts), are equally incorrect and misleading.

Symbols in Adjustment. Some strange and otherwise unaccountable actions of maladjusted persons may be understood by the concept of symbolization. A business man had an excessive tendency to worry about any situation having an aspect of social disapproval. When at one time he was involved in a minor automobile accident he was frantically worried for weeks lest the blame for the accident be placed on him, and entered a prolonged law suit with the sole object of establishing his innocence. When a trivial incident causes such an intense emotional reaction, one may suspect that it is the symbol or substitute for some other adjustive difficulty of greater proportions. In the case in question, it was found that the man's youth had been a period of struggle to preserve social appearances in spite of comparative poverty. His early business career had been marred by a bankruptcy to which he had reacted with extreme and unnecessary shame. Thereafter any manifestation of social disapproval became a cue or symbol to which he reacted with all the emotional strength pertinent to the earlier situation. The fact that the automobile accident was a symbol of his former troubles explains his intense and irrational response to it. This is an example of a symbol as a substitute stimulus in an adjustment problem.

Symbols also act as substitute responses in adjustment. Pressey (1926) describes the case of an unmarried woman thirty-five years old, employed in an orphanage, who was detected stealing baby clothes as they came back from the laundry. She did not try to sell them, and did nothing with the garments but to accumulate them in her room. On being accused of the thefts she at first made denials, but finally confessed that she took the articles because of an uncontrollable impulse, the source of which she did not understand. The woman's background leads to an explanation of the behavior. Born in the South in an impoverished mountain region she had been sent to a mission school and then became a housekeeper.

She had never married, whereas this was the universal rôle in life of the women of the social group from which she came. Now, in an environment that made matrimonial opportunities almost impossible for her she symbolizes her need for marriage by the irrational compulsive act. Although personality factors of great complexity are involved in the understanding of other aspects of this case, the meaning of the thefts is fairly obvious. The baby clothes were a symbolic substitute satisfaction for her motives relating to a husband and children.

In recognizing the importance of symbols in many spheres of human activity, it is necessary to recognize also the normal and commonplace origin of these signs and substitutes. Symbols are acquired in the same manner as all learned stimuli and responses. There is nothing mysterious about them. They have no hidden significance except if hidden means no more than difficult to determine. If all of an individual's past experiences were known, all of his symbols would be easily distinguished. A study of what an individual has learned reveals the meaning of his symbols. Conversely, the investigation of his symbolic behavior may give insight into his experiences and adjustment difficulties. Only in this sense are symbols significant in the diagnosis and treatment of adjustment disorders.

SUGGESTED READINGS

The development of motor behavior is dealt with in Murchison (editor), *Handbook of Child Psychology*, second edition, chaps. 3–8. Less detailed references are Woodworth, *Psychology*, third edition, chap. 8; and Jersild, *Child Psychology*, chaps. 1, 2, 3, 7, and 8.

Garrett, *Great Experiments in Psychology*, chap. 4, summarizes the principal experiments on the conditioned reaction. Pavlov, *Lectures on Conditioned Reflexes* is the most available original source on this topic. Watson, *Psychology from the Standpoint of a Behaviorist*, pp. 28–38, describes the conditioned reaction methods used in experimenting with human subjects. Mateer, *Child Behavior*, gives reports of original investigations of children's conditioned responses, and implications based on these. Burnham, *The Normal Mind*, chaps. 3–6 and 12–14, applies the conditioned reaction to many of the problems of mental hygiene.

The most complete general treatment of symbolic processes and meaning in behavior is given by Hollingworth in his *Psychology*, *Abnormal Psychology*, and *Educational Psychology*. A behaviorist point of view on language, symbols and memory is presented by Watson, *op. cit.*, chap. 9.

CHAPTER IV

MOTIVATION

PROBLEMS OF MOTIVE

The Demand for a Reason. Popular curiosity is not satisfied with a description of how a man performs an act; it also wants to know *why* he does it. The significance of motives, desires or urges is recognized in many fields as in industry, in law, in sport and in education. Why do men work? Economists, political theorists and psychologists have given various answers. It is suggested that men work because they have an instinct to do so, or because they must work to earn food and shelter, or because they seek social approbation, or so that they will not be scorned and derided. Why do people play baseball or congregate to see others play? Why does the school pupil conform to the rules and learn his lessons? Why does he not just sit there, failing to react to the instructive situations provided for him? Such questions as these indicate the widespread interest in motive and the necessity of making a thorough investigation of the problem.

In the treatment of adjustment problems the discovery of motives has been especially fruitful. James is the school bully. On the playground and before and after school he may be found vigorously bossing the smaller boys, mauling them, fighting when he is sure to win. Why does he do it? What is there in it for him? Virginia has run away from home three times. Her parents are in good circumstances and seem interested in her welfare, yet she persists in trying to get away. A study of her motives is necessary in order to understand the problem and assist in its solution. The practical problems of the psychological practitioner have been greatly clarified by the concept that all behavior, no matter how strange, has its motives. Only since this dynamic concept has entered psychology has

much progress been made in the solution of adjustment difficulties.

The Psychologist's Approach. Although the question of motives has been forced upon him by popular thinking, the scientific psychologist recognizes it as indicating an aspect of behavior worthy of investigation. Two fundamental problems of motivation have been extensively studied. The first is the discovery of the original *sources of activity* of the organism. What causes the animal or human to become active and to play an outreaching, examining, inquiring rôle in relation to his environment? The second problem concerns the *direction of activity* of the individual. Two persons confronted with the same external situation may react quite differently to it. The explanation is to be found in the character of the individual himself, in his present organic state and in the way that he has been modified by past experiences. As a preliminary statement in advance of complete investigation a motive may be defined as *that which arouses, sustains and directs activity.* The present chapter will attempt an analysis of this phenomenon.

Instinct Theories. A neat way of dispatching the problem of motive, formerly much utilized, was to ascribe a motivating power to instincts. The boy is described as fighting and bullying because of an "instinct of pugnacity." The man works because of an "instinct of workmanship"; we congregate because of an "instinct of gregariousness." A previous examination of this doctrine has already concluded that instinct is not a helpful or explanatory concept in relation to original nature. It is of no more value in connection with motive. If instinct is taken as a purely descriptive term then the instinct of pugnacity means merely that men fight because they have a tendency to fight, which leaves the problem as unsolved as if nothing had been said. Unfortunately, some persons have taken instincts to mean forces within the individual which cause or compel him to do things. Such a conception is even worse than useless. It peoples the organism with a host of little *daemons* who prod and urge and drive it to activity. This is a very primitive type of explanation. It is closely akin to the thinking of the savage,

who, for lack of better knowledge, ascribes the thunder, the wind, the growth of plants or the course of the sun to the operation of spirits or gods. The physicist knows that water does not run down hill or a balloon ascend because of spirits or "nature" or "instinct"; he is able to present a more detailed and naturalistic explanation. Progress in the understanding of human motives will come only when animistic notions are discarded and a mechanistic approach is made.

The psychoanalytic school of psychology has always stressed the importance and universality of motive and has made an important contribution by doing so. The various psychoanalytic theories, however, ascribe all motivation to the operation of a single instinct or to a pair of instincts of an antagonistic nature. These theories are sometimes helpful in describing human nature and in the solution of practical problems, but they are subject to criticism as being too vague in some cases and too limited in others. They are derived from a mentalist rather than from an objective approach and are open to all of the objections to instinct theories in general. The most influential of the monistic instinct theories is that of Jung, who describes the "libido" as a single all-important life urge, supplying the energy for all activities. This concept is almost identical with Bergson's *élan vital* or life force. It is difficult to see how such a notion of motive is psychologically helpful. All it says is that the function of life is to live, which is pretty obvious.

Among the dualistic doctrines of instinct the most important is that of Freud. It is difficult to state, since he has changed his theory several times, although change itself is not to be criticized, being the essence of scientific growth. Freud's chief instinct, which he has not varied, is a concept of libido which, unlike Jung, he defines more specifically as the sexual instinct, the term sexual being used in a broad sense. At an earlier period Freud contrasted the "ego-instincts" or tendency to self-preservation, with libido. This is simply a restatement of the ancient dichotomy of self-preservation and race-preservation referred to in a previous chapter. More recently Freud has decided that the energy of the ego-tendencies is essentially the

same as that of libido, hence the two are grouped together as "Eros" or the life instinct which he now places against a balancing "death or destructive instinct." The originator of psychoanalysis has also achieved another opposed pair, the "pleasure principle" and the "reality principle" which act according to the psychological definition of motive in initiating and directing activity. Other writers have proposed further pairs of antagonistic instincts. Adler stresses the ego-instinct or urge to individual superiority, counteracting it with a weaker social instinct. Trotter, in a view almost opposite, emphasizes the herd instinct (of conformity) opposed to a weaker self-assertive tendency.

It is true that sex, self-assertion and conformity are important human motives, but no one or two of them can be sufficient to explain all behavior, nor is any of them ultimate and unanalyzable. These are complicated motives, not primitive but in large part due to the learning processes of the individual. The dualistic conceptions of motive are of doubtful value because of their oversimplification and because they easily lead to animistic thinking. While psychoanalysts claim that they do not conceive of libido as an inner *daemon*, they speak of it as "moving," and "attaching itself" to various situations as only a separate living thing could, or at times of its "flowing," being "dammed up" and possessing more or less "adhesiveness" as if it were a physical fluid. Not by such romantic hypotheses, but by the objective observation of the physiological processes of the animal, is the problem of motivation to be settled.

THE NATURE OF MOTIVE

Nutrition as Motive. Many definitions of motive stress its function as an *energy* or *force*. If this is true, the source of the activity of animal organisms is very obvious. The moving power of any organism is the result of his bodily store of energy, and this comes from the assimilation of food. If an organism is amply fed it will remain active; if it is starved or if its assimilation

of food is impaired by illness the activity will decrease. When the organism is no longer able to repair its tissues by means of food products, it dies and activity is at an end. Behavior consists of muscle movements and of other physical and chemical changes, glandular and neural, in the body. These are essentially energy-consuming processes. The chemical source of this energy is the food that the animal eats.

This concept of nutrition as motive is a fundamentally correct one but it is unfortunately not very helpful in solving most practical behavior problems. It is true that a malnourished individual or one whose rate of metabolism is low will show low activity level. In most individuals, however, there seems to be little relationship between nutrition on the one hand and drive, energy or purpose, on the other. The fact is that a hungry animal shows greater activity than one that has been fed adequately. In the more complex sphere of human as distinguished from animal behavior, the connection between food and motive is even more remote. The well-nourished individual may be languid and purposeless; the lean, hungry, undernourished person may be full of activities, energies and purposes. Though food is the source of energy, the amount of it, save at the extreme of starvation, does not explain differences in motivation.

Stimuli as Motives. Since a motive is anything that arouses and sustains activity, it is apparent that a stimulus must, in a sense, be considered as a motive. The stimulus of a loud noise arouses, in an infant, a violent and diffuse activity. A pin prick arouses a reaction that is sustained and continued until the undesirable stimulus is removed. The stimulus in no case, however, provides the energy of the response. This is provided by the nutritional processes of the organism. The stimulus might by analogy be considered as a trigger which sets off the activity of the response. In a new-born infant the intensity of the response is roughly proportional to the intensity of the stimulus. A faint noise initiates slight response, a louder one greater response, a very loud noise causes as strong a response as the infant can make. In adults, when primitive behavior

has been overlaid with much learning, this is not true. A faint cry for help may arouse intense activity; the violent stimulus of a brass band may arouse very little reaction indeed. For an adequate explanation of strength of motive in such instances a modified formulation is required.

Some stimuli partake more of the nature of motive than do others. A tap on the knee arouses the knee-jerk reflex. In this case, the stimulus operates and the reaction is thereupon promptly completed. Activity is aroused, but it is not sustained. More motive-like are stimuli such as those of hunger or the pin-prick which require adjustment on the part of the organism. Reactions to such stimuli are sustained until the stimulus is removed, as in hunger by eating, or until the organism has moved out of the range of the stimulus, as illustrated by the response to the pin-prick. These *persistent stimuli requiring an adjusting response* are very basic motives.

Tension as Motive. The problem of why some stimuli act as motives while others do not is considerably clarified by the concept of *tension*. In the motive of hunger, the stimuli which arouse activity are the sensory reports of stomach contractions. The contractions constitute a persistent or recurrent tense state of certain visceral muscles. It must be made clear that in saying that tension arouses activity we are not merely setting up tension as a vague concept similar to "instinct." Tension means primarily that something is tense, that muscles or organs are innervated to contract. This inner physiological state is a stimulus arousing activity. It is apparent in all of the appetitive motives, of which hunger is typical, that visceral tension, acting upon receptors, is the operating stimulus. To this kind of stimulus the term *appetitive tension* may be applied.

It has been observed, however, that a loud noise will also arouse activity in an infant and, what is more remarkable, that this activity will be sustained for some time after the physical stimulus has ceased. In this persistence of response the reaction to the loud noise differs markedly from the knee-jerk reaction. The explanation of the difference lies in the concept of emotion. The loud noise (or any other sudden overstimulation)

is an adequate stimulus not only for an immediate muscular reaction but also for a series of visceral changes which constitutes emotion. The loud noise then sets up an inner physiological and neural state which is in many ways similar to the physiological state of hunger. The *emotional tension* persists after the noise stimulus has ceased, and is itself a stimulus to activity. Stimuli which arouse emotional tensions are therefore, like the appetitive states, broad and persistent in their after-effects, and consequently are motives.

Drive, Mechanism and Motive. The basic types of persistent stimuli that have been considered, such as hunger pangs or painful skin stimulation, arouse activity, but do not natively arouse specific responses. The hungry infant shows the diffuse activity of restlessness and crying, so does the child with a pin pricking him. In the newborn it is difficult to tell what is the cause of such behavior, and the nurse will try one ameliorative procedure after another until, by the cessation of the crying, she knows that the adjustment has been made. Tensions natively arouse only general activity, and will be spoken of as *drives. A drive is a stimulus, usually internal, that arouses persistent mass activity.*[1]

The adjustive behaviors necessary to reduce, satisfy or remove drives are learned. These definite adjustive habits will be referred to as mechanisms. *A mechanism is an acquired response tending to the reduction of a drive.* Many drives may be considered as native, *all* mechanisms are the result of the learning processes of the individual.

The concept of drive assists in solving the first of the psychologist's problems of motivation, that of the origin of activity in general. The term *motive* in the specific sense in which it will be used hereafter applies to the second problem, the *direction of activity.* Motive, therefore, involves both drive and mechanism. When an individual selects one act and rejects another, in motivated behavior, he is either differentiating between simultane-

[1] Freeman (1934) prefers the term *excitant* to drive, since the latter term may suggest to some that the source of motivation is outside the organism, or else that it is removed from the mechanistic scheme of nature. We will retain the historical usage of drive, but in the same sense as excitant, recognizing that it is usually intra-organic.

ously operative drives, or employing mechanisms. Motives are learned behavior, though they originate from the simpler and more fundamental drives.

The relationship between drive and mechanism is most clearly shown by a diagram.

1. Primarily

STIMULUS.....DRIVE.....ACTIVITY
(as appetitive or emotional tension)

2. After Learning has Occurred

STIMULUS....DRIVE....MECHANISM...TENSION REDUCTION
(habit) (removal of stimulus)

SOME FUNDAMENTAL PHYSIOLOGICAL DRIVES

Hunger. The drive of hunger has been mentioned as typical of the entire class of appetitive drives. On the nature of this state a very respectable body of experimental data is available, both because of its importance to life and because it is fairly easy to investigate. Although the appetitive tensions are less significant to adjustment problems than are some others, the entire field of motivation may be clarified by a detailed study of the causes and results of hunger. It has been shown, as by Cannon (1920), that the introspectively felt pangs of hunger coincide with contractions of the smooth muscles of the alimentary canal, particularly of the stomach. To demonstrate this, the subject swallows a long thin tube ending in a soft rubber balloon which is lightly inflated within the stomach. After considerable preliminary experience, the subject experiences no discomfort from the presence of the balloon. Cannon's subject pressed a key whenever he felt a spasm of hunger, this response being automatically recorded on the same device with the stomach contractions. In every instance the feeling of hunger slightly followed the maximum contraction, indicating that the visceral tension caused the sensation, rather than *vice versa* as might be possible. The spasmodic contractions of the

stomach may be caused by the emptiness of that organ or by a chemical stimulation of the stomach walls by products of the gastric glands whose secretions are free to act in this manner when not absorbed by food. Whatever the remote cause of the stomach contractions, it is agreed that they constitute the stimulus of hunger.

The rôle of hunger as drive is indicated by many experiments with lower animals such as rats, which show greater activity when hungry than when recently fed. A good example of such a research is that of E. M. Ligon (1929), although one of the findings of his study differs from those of others and is of particular interest. Three groups of rats were used, tests being made six hours, twelve hours and twenty-one hours after feeding. A measure of degree of activity was made by noting the number of revolutions of a revolving cage in which the rats were placed. The group 21 hours without food were by far most active, the 6-hour group much less active and the 12-hour group slightly less than the latter. The rats were then caused to learn their way through a maze to reach food, a type of learning the speed of which is greatly influenced by the degree of activity shown by the animal. Here again the rats that had not eaten for 21 hours learned most rapidly, those that had gone without food for 6 hours next best, while those deprived for 12 hours did most poorly. Ligon interprets the results as showing the operation of two drives. The rats deprived of food for 21 hours showed the operation of a strong hunger drive. That the rats that had no food for 12 hours learned less rapidly than those run 6 hours after being fed was ascribed to the effect of nutrition and general bodily well-being. The 12-hour rats had lost this general activity drive while hunger was not yet strong enough to compensate for this loss of general vigor.

The most significant experiments on the hunger drive in relation to activity are those performed on human subjects by Tomi Wada. The four subjects of this study swallowed stomach balloons similar to those used by Cannon. A subject reclined on a bed so arranged that any gross bodily movement was recorded simultaneously with the stomach changes. In

one experiment the subjects read for a period of nine hours. Numerous bodily movements appeared during periods of stomach contractions, practically none during quiescent intervals. (Fig. 12.) In another procedure the hunger contractions and bodily movements were recorded during sleep. Even when sleeping, the periods of activity, tossing and turning, coincided

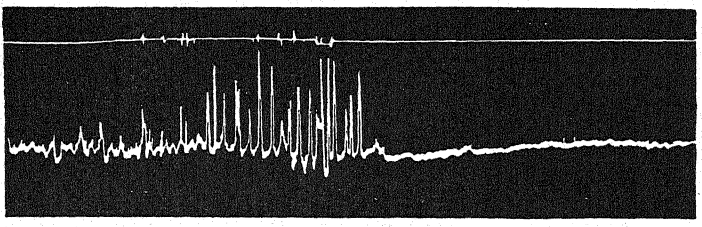


FIG. 12. STOMACH CONTRACTIONS AND BODILY MOVEMENTS

The upper line represents bodily movements; the lower line stomach contractions. Note that movements coincide with contraction periods. This record was taken during reading. (Wada, *Arch. Psychol.*, 1922.)

with the internal contractions. Here is very direct evidence of a visceral tension acting as drive and arousing random responses. Further findings of Miss Wada are even more surprising. Subjects' strength of grip was tested at intervals and proved to be most powerful when contractions were occurring. One subject could exert 12 kilograms more force, on the average, when his stomach was making rhythmic contractions than when it was quiet. Two subjects were given intelligence tests throughout a day. On the whole, they made higher scores when the stomach contraction drive was operative.

The experimental studies of hunger show the definite nature of the drive as a visceral tension. They show that restless activity is increased and that learning is facilitated by the presence of the drive. Even in voluntary motor and intellectual processes, the drive functions to increase the intensity of the responses.

Other Organic Needs. *Thirst* and *air-getting* are closely allied to hunger and even more imperative. The stimulus for thirst is a dryness of the mucous tissues of the mouth and throat caused by a decrease in salivary secretion due to a shortage of

water content in the blood. The rate of breathing is controlled by a complex automatic mechanism determined by the ratio of carbon dioxide to oxygen in the blood. In both of these conditions the incoming impulses to the central nervous system arouse the organism to restless activity which continues until the stimulus is removed by the satisfaction of the tissue need.

An interesting, although complex, type of organic need is that of *temperature regulation*. Living organisms operate with maximum efficiency within a narrow range of environmental temperature. The relationship of temperature to activity involves two factors. Activity is promoted by a suitable temperature as a condition for greatest organic efficiency. On the other hand, activity is aroused by unsuitable temperatures, resulting in adjustive behavior. W. E. Agar (1927) has shown the existence of both factors in a water-living invertebrate. The water-mite was placed in a tube of water kept at various temperatures. At the optimum temperature, of about 60° F., it showed the greatest gross activity; at higher or lower temperatures it showed less activity but greater variability of response as evidenced by a larger number of turnings back and forth in the tube. Since the organism was given no opportunity to adjust in this experiment the greater variability was all that it could show as motivated behavior. In higher animals, the long known fact that temperate climates are more conducive to enterprise than are torrid or frigid climates may illustrate the effect of temperature on the organic well-being drive. Cold young animals' restless movements, which cease when they have become huddled together thereby securing warmth, show the operation of unfavorable temperature as drive.

The tendency of the organism to *rest when fatigued* and to *sleep* may perhaps also be considered as responses to organic needs, although the reaction is the inhibition of activity rather than the arousing of it. The physiological basis of these responses is obscure and little definite information is known, especially concerning sleep.

Eliminative Tensions. The distention of the bladder or of the large intestine by excretory products produces a tension that

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arouses general restless movement in much the same way as do the appetitive tensions. This activity persists until the tension is reduced by the emptying of the full body cavity. The unrest and discomfort often felt because of eliminative tensions is a good example of the nature of drive in general, but this type of motivation is relatively unimportant in adjustment problems.

Glandular Conditions, Sex. The body possesses two great co-ordinating systems, the nervous system and the glands. The latter often act in conjunction with neural innervation, sometimes relatively independently. Two examples of glandular excitation have already been described, the rôle of the gastric secretions in hunger, and that of the adrenals in emotional states. Glands arouse activity through chemical substances known as hormones, secreted by the gland and circulated by the blood. The thyroid gland, located in the neck, has for example, a considerable effect on the general activity level of the individual through its control of the rate of chemical change in the body. If the secretion of the hormone of this gland, thyroxin, is deficient, the individual is sluggish and lacks alertness. An excessive secretion is shown by excessive activity, irritability and "nervousness."

The fundamental sex drives are to some extent of the glandular type. The sex glands of both males and females secrete hormones which determine the secondary sexual characteristics of the body and also influence general activity level. In the adult male the sex drive also partakes of an eliminative quality, due to an accumulation of the secretions of the gonads. It has been seen that the hunger drive does not itself lead to the seeking of food, which is a mechanism or habit, but only to activity in general. Just so, the sex drive does not primitively arouse definite sexual behavior, but only serves to raise the diffused activity level of the organism. Much of the active, aggressive behavior of young adult males in any species, usually vaguely ascribed to "animal spirits," is motivated by sex tension, even though in most cases the individual does not recognize it as such. In individuals in which the sex glands atrophy or are removed by operation, a general lowering of the level of activity

usually results. All sex behavior beyond this tension and urge to activity is learned rather than purely physiological.

In the adult female, sex motivation is of a slightly different type, cyclic rather than cumulative, and related to the periods of oestrus or "heat." G. H. Wang (1923) measured the daily activity of adult female white rats by means of a squirrel cage, a drum which revolved as the animal ran. He noted cyclic changes in activity reaching peaks at intervals of about four days. Four days is also the period of the oestrus cycle of the rat, and furthermore, anatomical observations showed that the periods of greatest activity coincided with the times when the animal was in heat. Males and immature females did not show periodic changes in activity. There is some doubt as to whether the phenomenon of heat occurs in women, the function of menstruation not being strictly the same as oestrus. There is no doubt, however, that the glandular state of being a woman in good health is conducive to activity.

It will be noted that sex has here been considered in its most biological meaning, as a physiological state. Two other usages of the term sex drive are current. They refer: (1) to activity aroused by stimulation of the sex organs and (2), by analogy, to activity aroused by any other similar mild skin stimulation as fondling, tickling, and stroking. The first of these is sexual, though not of the nature of physiological need. That the second is truly sexual at all is a little doubtful, but it is important and psychological usage is in favor of calling it "love or sex." No confusion should arise if these various meanings of sex are kept in mind. The latter named two will be described on pages following.

The Relative Intensity of Drives. It has been possible to compare the strength of various simple drives in lower animals by experimental methods. One procedure used is the obstruction method, in which the animal is separated from a goal by a barrier. Warden's type of obstruction apparatus contains an electric grid in the floor of a passage which gives a painful shock to the animal. The animal's persistence in crossing the grid to reach an object is the measure of the intensity of the drive

operating. Another apparatus used for measuring drives is the choice box in which the animal must choose passages leading to various goals. Warden (1931) states that the order of strength of drives of the female white rat is: maternal, thirst, hunger, sex. With human subjects experimentation is more difficult and the simple drives have not as yet been comparatively evaluated. Some work has been done with complex motives, as in the experiment of Hurlock (1925) who showed that praise is in general a more efficient motivation than is reproof, in spurring elementary school children to accomplishment in arithmetic.

SOME DRIVES RELATING TO EXTERNAL STIMULI

Tissue Injury. That activity is initiated by a painful external stimulus such as a pin prick has already been cited. This is a specific instance of a very general kind of motivation. Any stimulus which because of its nature or intensity causes the injury or destruction of living tissues of the organism acts as a drive to activity. Responses to stimuli that cut, burn or bruise the individual appear in the adult as avoidance reactions. Precise and accurate avoidance behavior as shown by an adult's reaction to a hot stove is, however, learned. Primitively, tissue injury inflicted upon a young organism sets up only a state of unco-ordinated activity, of writhing, wiggling and howling. This is, like other conditions of drive, of a general rather than specific nature. If the energetic random activity takes the infant out of the range of the pain-producing stimulus, the responses subside because they are no longer stimulated. Learning occurs quickly and the successful "avoidance" movement, first made by chance, comes to be made directly on subsequent painful experiences. The organism originally does not avoid these stimuli because it *knows* that they are harmful, but because the stimuli excite it to intense activity.

In the same class with tissue injury, which involves overstimulation of cutaneous receptors, are the drives aroused by the overstimulation of any sense organ. A loud noise (auditory overstimulation), loss of support (proprioceptive overstimula-

tion), and all too strong tastes, odors, or pressures act as violent arousers of activity. Too bright a light would undoubtedly belong to the same group of stimuli but for the adaptive value of the eyelids and the pupils which shut off or diminish the intensity immediately upon its appearance.

Emotional Tension. Reaction to overstimulation always involves the profound visceral changes which have already been described as those of excited emotion. A great inner turmoil is set up which constitutes a visceral tension. The important quality of emotional tension from the point of view of motivation, is that it persists after the external stimulus has ceased. Emotional tensions continue for appreciable periods of time and prolong the drive originally initiated by the stimulus itself.

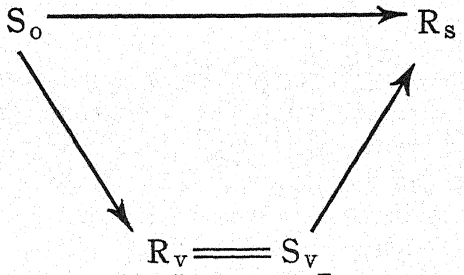

FIG. 13. THE RELATION OF EMOTIONAL EXCITEMENT TO ORGANIC DRIVE

A stimulus S_o may excite both skeletal (motor) response R_s and visceral response R_v. The visceral state may serve to reinforce or inhibit the motor response. (Dashiell, *Fundamentals of Objective Psychology*, Houghton Mifflin Co., 1928.)

If emotion occurred only in response to overstimulation, however, it would not be an important concept for the overstimulation itself would be an adequate explanation of the drive. But we have seen that emotional reactions by the process of conditioning may be attached to stimuli that are not in themselves excessively violent. In Watson's experiment previously cited, the child learned to react emotionally to a white rat, itself originally an inadequate stimulus. At a very early age loud noises, loss of support, restraint, rough handling, and pain are reacted to as overstimulating. As the child develops, many other stimuli become conditioned arousers of the same emotional tension. The substitute stimulus arouses an emotional response which is a visceral tension and this acts as a drive to activity. Emotional reactions serve as a connecting link between external and internal stimuli. Aroused chiefly by

outside conditions, the emotion is an inner state whose action is similar to that of the appetitive tensions. Dashiell (1928) suggests that the emotional response serves to facilitate, or in some cases to inhibit, responses being made to various stimuli. (Fig. 13.) He considers emotion less important on its own account and more on account of its powerful influence on overt activities.

Adient Drives. The drives so far considered are those of persistent "annoying" stimuli, such as hunger, eliminative tensions and overstimulation. In each of these instances activity is aroused which persists until the stimulus is removed. Psychological literature has unfortunately rather neglected another important type of drive, in which the organism acts in such a way as to *perpetuate* rather than to remove the stimulus. If I scratch a kitten's neck it lifts its head, pushes forward, turns and twists, all of which activities tend to bring the stimulus to bear in a stronger manner. Activity is aroused, and therefore the scratching is a drive-stimulus, but in this case the resulting activity moves the organism toward the stimulus rather than away from it.

Such a drive might be called a satisfaction drive, but this term leads one's vocabulary dangerously close to the "pleasure principle," "feeling tones" and other pitfalls of introspective psychology and hedonistic philosophy. Instead of using at this point a word which has been employed in many confused and unpsychological meanings, it will be well to follow the lead of E. B. Holt (1931) and introduce a new one, adient, from *ad eo*, to go toward. An *adient drive* is a situation which results in behavior acting toward the stimulus, increasing and perpetuating its action. The opposite type of drive may simply be termed avoidant. The adient response is more basic and fundamental, more common in child and adult experience, than the avoiding types of reaction. The child tends to look at, handle and approach almost all stimuli except overviolent ones. This has already been referred to as the diffused activity in response to stimuli, which is usually called curiosity.

Some stimuli cause more markedly adient responses than do

others. A bright object, a sweet taste, a flowery odor, a smooth stroking of the skin are stimuli to which people in general react adiently. On the other hand sour tastes, foul odors and harsh scratching usually call forth restless behavior leading eventually to avoidance. Whether these sensory "satisfiers" or "annoyers" are fundamental and native is open to question. A tiny child shows no marked reaction to sour substances in the mouth, as is evidenced by the use of this reaction as a developmental index. Kuhlmann (1922) standardized the test situation of placing a piece of bread soaked in vinegar in the mouth of an infant, as a part of his developmental or "intelligence" scale. Not until the age of 18 months will the average infant spit out the sour substance. The gradual development of this avoidance behavior may be ascribed to the maturing of the sensory neurones of taste or possibly to the formation of habit. Whether native or acquired, the differentiation of stimuli causing adience or avoidance is of considerable importance.

Returning to the situations which elicit adient responses, we find that the skin-stroking stimulation is more important in adjustment problems than are the other stimuli of this type. It has been suggested that petting, fondling and stroking facilitate blood circulation and other normal metabolic processes, and therefore inhibit the activity drives which would lead the organism away from the stimulation. Also, the mild skin stimulation sets up a visceral state operating under innervation from the cranial and sacral divisions of the autonomic system which gives rise to general bodily well-being. This inner state acts as drive, in this case adient, or tending to perpetuate the stimulus. The reaction to fondling has already been referred to as the so-called love emotion. It is probable that attachments of the more complex love type come from the extension and modification of this primitive mode of reaction.

The Relationship Between Adience and Avoidance. Although certain primitive adiences and avoidances may be independent, these types of activity become closely related in the animal that has acquired a repertory of adjustive habits. In the mature organism, an avoidance of one stimulus is always an

adience toward another, and *vice versa*. Hunger is primitively an avoidant drive, activity being initiated that continues until the stimulus, stomach contraction, is removed. After an individual has had experience with food, a conditioned adience toward it accompanies or, in a sense, replaces the native restless response. An illustration of the opposite type of modification is seen in the behavior of a child who has become accustomed to petting. In addition to approaching the source of the fondling, the child avoids anything that will hinder the stimulation and responds to its withdrawal with an intense response, including emotion of the fear-rage type. Through these learning processes motivated behavior comes to be made to objects, persons and situations, whereas in the original state of nature all drives pertain directly to the bodily conditions of the subject.

THE ELABORATION OF DRIVES INTO MOTIVES

Learning in Relation to Drive. It is apparent that adult humans are motivated by other stimuli than those which directly and physiologically arouse drive-tensions. The more complicated motives of the sophisticated individual do not, however, arise independently of bodily states. Motives are drives which have been modified by ordinary processes of learning. This learning acts in two principal directions, to extend the range of stimuli that will arouse the drive, and to modify the activity that results.

If, while seated at your desk, savory odors arise from the kitchen, you suddenly become aware of hunger. A drive which is natively aroused only by an internal stimulus of nutritional deficiency is now aroused by an external sensory stimulus. This has been effected through the mechanism of the conditioned reaction. Daily throughout the individual's life the odor, sight or thought of food has been simultaneously associated with the hunger drive. The substitute stimulus now calls forth the reaction. The most important general trend in the development of motive is the conditioning of external

stimuli to operate in place of internal ones. The internal state has not lost its importance, however. If the individual has just eaten his fill, or if he is digestively unwell, the external stimulus has less effect. You can lead a horse to water but you can't make him drink — unless his inner thirst drive is to some extent operative.

In response to the hunger drive, or to some external surrogate for it, you now arise from your desk, bathe, dress for dinner, go to the dining room and eat, making definite and skillful movements which convey the food from the table to your digestive tract. This illustrates the second principle in the development of motive, the acquisition of mechanisms. Instead of making the random reactions to the hunger drive typical of the puppy or infant, you make definite and effective learned reactions. The drive, by a learning process, now calls forth specific and differentiated rather than general activity. The new-born infant squirms and cries whether in hunger, pain or other overstimulation. The three-year-old asks for food when hungry, withdraws from the painful stimulus, and runs to mother when frightened.

Subsistence Motives. It is unnecessary to enlarge upon the fact that the major economic activities of man are motivated by elaborations of the organic need drives. Food-getting, water-getting and shelter-providing behavior occupies a large place in human effort. In these motives is seen clearly the effect of the learning of elaborate accomplishment mechanisms which serve to satisfy physiological drives. The subsistence motives, however, important as they are in life as a whole, are relatively unimportant in adjustment problems because they cannot be quelled by substitute satisfactions. Man must eat, drink and be sheltered in order to satisfy these drives and failure to satisfy them results not in maladjustment, but death. Further consideration of the elaboration of subsistence motives is best left to the study of Economics.

Motives Derived Chiefly from Emotional Tensions. Of the greatest importance to the psychology of adjustment are those motives which are evolved from the emotional tensions already

mentioned. It has been shown how emotional tensions come by conditioning to be aroused by other than the originally adequate antecedent, overstimulation. Emotional motives also develop by the learning of mechanisms or habits of response. The earliest learned differentiation is between struggling and avoidance responses, spoken of as rage and fear respectively. From the trend of development which begins with infantile rage come the motives which may be termed mastery or self-assertion. From fear come certain aspects of motives to submit and to conform. From the modification of the love response, on the other hand, comes much of the adult tendency to seek approval and attention. Each of these motive groups must be considered separately and in detail.

Mastery Motives. One of the most universal and dependable groups of human motives and one of the strongest, appears in the form of the urges to excel, to succeed, to overcome obstructions, to worst a rival, in general, to master situations. These are developed forms of *rage* behavior. In young infants the only situation that will arouse emotion and struggling, or rage, is some form of restraint of bodily movement. Soon, however, this response becomes conditioned to other stimuli, principally to verbal and other symbolic ones. The parent's saying "no," accompanied frequently by physical restraint comes to be a substitute stimulus for rage, as is shown by the tantrums which young children make in response to such stimuli. As the child grows older and his circle of contacts widens, other children appear as actual or potential restrainers either of his person, his activities, or his possessions. The child reacts to such a restraining person or rival, primitively with fighting which grows directly from the struggling responses, and later more sophisticatedly with increased effort or with planned procedures for overcoming the obstructions offered.

The modification of the response in rage is equally as important as the modification of the stimulus. Natively it is a random reaction, a slashing and kicking and screaming. By habit formations the diffuse activity is modified into specific activities which are pertinent to the various situations. To parental re-

fusal the child now responds by pleading, to restraint by another child by fighting, to the rivalry of another pupil in school by increased effort. The evolution of the response to obstruction is typically observable in a child's response to a toy which will not operate properly. A younger child will respond by vigorous random movements which destroy the toy. In an older child the emotional tension aroused acts as a drive to constructive effort along learned lines, in the attempt to discover and repair the difficulty. The most remote form of mastery motivation is seen in the effort and interest of the scholar or scientist in an abstract problem, on which he may work for years to overcome an obstruction to his understanding of a phenomenon or to his perfecting of a technique.

The permanence, strength and universality of the mastery type of behavior, then, are due to the fact that it is a form of modified and conditioned emotional reaction. Stimuli which arouse mastery behavior are substitutes for or symbols of overstimulation in the form of restraint, and the behavior in response to such stimuli is a modified form of the struggling movements which restraint calls forth earlier in life.

Social Approval Motives. Equally as universal and dependable as the mastery group of motives are those which may be enumerated as the urges to seek the approval of other people, to get attention, to seek sympathy, to be with others rather than alone and to conform to the mores, customs and fashions of one's social group. These urges are composed principally of modifications of the *adient drives*, especially of those relating to the satisfaction of organic needs; and of the responses to mild skin stimulation, the *love* reaction. The account of the development of these drives into the social-approval motives closely parallels that of the development of the mastery motives, consisting of the extension of the stimulus and the modification of the response. The infant natively smiles and shows other satisfaction responses only from the care or stroking of its own body. Inasmuch as the nurse or mother is always present when these stimuli are administered, conditioning occurs, and the response is made to the mere presence of the caretaker. The

child smiles and reaches for the other person. By such behavior he shows both the existence of a conditioned response of satisfaction and facilitation of further stimulation, which is the adient response. Similarly the child becomes conditioned to symbolic approval stimuli in the form of words, gestures and facial expressions. Feeding, petting and other satisfying stimuli are experienced simultaneously with kind words, a soft tone of voice, certain gestures and certain expressions. Hence these latter stimuli become potent to call up the inner state of well-being, which is the love emotion, without the presence of the original stimuli. These conditionings spread to other persons in diminishing degrees, the strength of the response, as is usual with conditioned reactions in general, being proportional to the degree of similarity between the person calling it forth and the persons with whom the response was learned. The child is more satisfied by the approval or presence of the loved (i.e., skin-stimulating) individuals than of others, of the familiar group in which the conditionings have had exercise than in the case of strangers. This is the basis of the development of the social motives of the individual.

The absence of accustomed satisfying stimuli is in itself an annoyance, and a drive to activity which ceases when the satisfying stimulus is restored. The baby on being overfondled, cries when the petting is discontinued; the child who has been the center of attention "shows off," talks loudly or performs somersaults when the attention of the group is directed elsewhere; the young man alone for the evening goes out to seek the company of others. This illustrates the reciprocal connection between adience and avoidance. The social motives are not, therefore, merely passive. The individual accustomed to social stimulation does not wait for it to come to him, but seeks it. The lack of usual attention and approval results in intense random activity, tending toward tension reduction or adjustment.

Conformity Motives. Another strong type of motivation is represented by tendencies to conform, to do the expected thing, to avoid blame and criticism. This is not merely a passive

condition as may be seen from the frantic activity that often results from expressed or implied criticism of an individual. The strength and nature of the conformity motives suggest their emotional origin. It is probable that they develop from the *fear* reactions of childhood, which are responses of emotion and withdrawing to some kinds of overstimulation. If overstimulation in the form of painful punishment, either by parents or other adults or by child associates, is accompanied by criticism, scorn or blame, a conditioning occurs. In the future, criticism and similar symbolic stimuli are reacted to by fear or a modification of the fear response. The blameworthy action, which brought upon the individual the punishment, is inhibited, this being a not undesirable result in child training. If the association of punishment with blame is frequently made, a more general response is learned, and the subject comes to react to all criticism by fear and submission. This is a common type of motivation, the inhibition of many antisocial or unconventional acts by fear of criticism or of scorn. It is one of the strongest urges toward social conformity. Fear of criticism is, however, undesirable because it is a strong, disorganized emotional response, hindering rational action. Social training is better secured by the positive method of attaching approval to the desirable responses, utilizing the milder adient forms of motivation.

Sex Motives. In no other aspect of motivation does as much modification occur as in the sex motives. In the lower animals in a state of nature, and natively in man, the sex drive is a glandular and physiological one, satisfied by direct (though learned) mechanisms when it arises. In civilized man the direct satisfaction of the sexual urges is thwarted at their appearance in infancy and at their strengthening in the glandular changes of adolescence by social conventions and economic obstacles. This thwarting directs attention to the drive and attaches it to many substitute stimuli and substitute responses. By learning processes, chiefly verbal in nature, the presence of persons of the opposite sex, pictures, books, articles of clothing, in fact an innumerable inventory of objects and events become

sexual stimuli. Many substitute tension-reducing activities such as games, sports, dancing and even more remote reactions become in a broad sense sexually adjustive. Because of its strength and because direct action is so frequently thwarted, the sex motive is of especial importance in adjustment problems.

Mixed Motives. The strong conditioned emotional motives of mastery, social approval, conformity and sex are perhaps too arbitrary a sample of this kind of human motivation, important though they may be. Several other categories might be named as worthily. The need or urge for *security*, for example, is a strong motive the application of which is often helpful in solving adjustment problems, as was stressed by Thomas (1924) in studies of delinquent girls. Security may be considered as derived from the physiological needs and the love responses of the infant in a way related to but not identical to the derivation of social approval.

In almost every situation a combination of interacting motives operates, and frequently all of the strong motives of the individual are determiners of a single act. If we return to the question of why men work, we find this true. Men work not only to secure food and shelter, but also because work means achievement or mastery, and because work is applauded by society while laziness is scorned. Men also work because it secures the approval and the well-being of the individuals to whom they are love-conditioned. To a young man work means income and the possibility of marriage, thereby involving the sex motive. The *acquisitive* motive is similarly complex, involving sustenance, mastery, approval and sometimes sex. The motive of *filial love* is a conditioned love drive, with factors of social conformity added. *Parental love* is very mixed. Although it has its roots in the stimulating effect which nursing, handling and fondling the baby has on the mother, the factors of social approval and of the sense of mastery involved in the care of the helpless babe are also important.

Other Habits as Motives. The strong universal motives such as social approval are in a sense habits, for they are learned

modes of responding to drives and of reducing physiological tensions. Some factors involved in other habits which are not so strong or so universal should also be considered in relation to motive. Let us suppose that a man is in the habit of reading the evening newspaper after dinner. He goes to the door where the newspaper is usually thrown, but fails to find it there. He calls to his wife asking if she has seen the paper, and upon receiving a negative reply he interrupts the play of his children and questions them. They have not seen it either. Then he looks in the shrubbery around the porch to see if the paper could have fallen there, and on his neighbors' porches to determine if it could have been thrown there by mistake. No paper. So, with verbal tension reducers in the form of uncomplimentary remarks concerning the newsboy, he puts on his hat and coat and goes to the store to buy another copy. When he returns with the paper he sits down to read it in obvious contentment. Must one then postulate a newspaper-reading motive, a cigar-smoking motive, a golf-playing motive and so *ad infinitum?* These habits are obviously motivated behavior. Activity is aroused and sustained until the stimulus is removed. The parallel between the behavior of the man seeking his newspaper and that of a hungry dog who runs and digs and noses hither and yon until food puts an end to the drive, is very complete and exact. Habits, apparently, operate as motives.

When a well-formed neural pathway exists between a stimulus and a response, there is a compulsive tendency to make the response whenever the stimulus is experienced. This was well illustrated in certain of the conditioned reaction experiments of the last chapter. If a stimulus is given under inhibitory conditions, the response is not made, but the animal remains in a restless state of readiness to react, which might be termed a neural tension. If the inhibition is removed, the response is made immediately and vigorously. The same compulsion or drive is seen in verbal habits. If an experimenter places before you the stimulus: NAME OPPOSITES. BLACK .....; RICH .....; practically every one will speak the correct responses vocally or subvocally, many will write them in the spaces pro-

vided. In fact under proper administration of this experiment you would have a difficult time *not* to think of white and poor. This is the factor which Woodworth (1918) referred to in his often-quoted generalization, "*the mechanism furnishes its own drive.*" If a given mechanism or habit reaction has been repeatedly made to a given stimulus, there will be a drive to make this response whenever the stimulus appears.

Another supplementary view of the action of habit as motive is that the interruption of an habitual activity is reacted to as restraint and hence produces rage or a rage-conditioned drive of effort. A little child who is playing with his blocks reacts with rage if they are summarily removed. The adult reacts with effort, sometimes considered obstinacy, to attempts to change his habits, and not infrequently flies into a full-fledged primitive rage as well.

It must not be assumed, however, that habit motives are totally independent of the more basic motives previously considered. Most habits are mechanisms of response to the fundamental drive tensions. The man reads his paper, in the first place, in response to those aspects of the mastery and social approval drives which are satisfied by knowing what is going on in the world and what his neighbors are doing, and by being able to talk of those things of which his social group speaks. Most strong habits are acquired as a result of strong motives, and when the habits are thwarted, these more basic motives are thwarted indirectly.

THE ORGANIZATION OF MOTIVES

Sentiments. The study of motivation is further complicated by the fact that individuals tend to build up systems of emotional response and of motivation in relation to familiar objects and events and persons. Such systems of behavior are called *sentiments*, a term which is defined in an exact psychological sense only slightly related to the popular meaning of the word. McDougall (1923) describes a sentiment as *an organized system of emotional tendencies concerning an object or class of objects.*

Two typical sentiments are *love* and *hate*. Sentiments are not pure emotions or motives because they cannot exist apart from relationship to some person or object, and because this object may call forth different emotional behavior at different times, which behavior is still consistent with the sentiment. The person to whom the love sentiment is attached calls forth love emotion and adient motivation when he is present, fear when he is in danger, rage when he is threatened. The hated person or object elicits fear or rage or both when he is present, rage when he succeeds and joy when he is overthrown.

McDougall points out that sentiments are learned forms of behavior. Each sentiment is gradually built up according to the experiences of the individual. When emotion is repeatedly excited by a particular person or object, that person becomes a substitute stimulus for emotion, and his presence, his possessions or the thought of him may call forth emotion or emotionally motivated behavior. If a child is frequently thrown into contact with a person who shouts at him and punishes him, this person becomes a fear stimulus. If the same person also interrupts the child's play, rudely interferes with him or physically restrains him, a rage reaction is also developed. Henceforth the child's attitude toward the person is not fear alone nor rage alone but an interaction of the two, a sentiment, in this case hate. Sentiments are among the strongest motivating influences of the individual, the drive acting in the form of emotional tension.

Among the sentiments that have been dignified by the possession of a name may be found those of reproach, jealousy, resentment, shame, joy and sorrow, remorse, admiration, gratitude, the parental and filial sentiments, loyalty, patriotism, religiousness and reverence. The number of sentiments is, of course, as inexhaustible as the number of an individual's habits. Sentiments with the same name do not always act in the same way or in the same degree. Loyalty to one's country, state, city, college, fraternity, or family, all involve similar elements, but each differs in the intensity and in the nature of the motivated behavior called forth. The value of the term sentiment

is only to emphasize the fact that stereotyped forms of motive are typically called forth by certain objects, events, and persons.

The Sentiment of Self-Regard. Just as the individual builds up sentiments toward other persons through his experiences, he also organizes a sentiment in relation to himself. The sentiment of self-regard is the interacting pattern of all of the fundamental motives of the individual. Knowledge of self, like knowledge of others, is learned. At the lowest level we find the baby exploring his own body, learning through simultaneous stimulation that certain visual objects, its toes, are the same as the objects it can feel and wiggle and from which it can experience sensation. On the level of motive, the child becomes acquainted with his organic needs and their satisfaction and with his emotions, abilities and limitations. The most useful meaning of the sentiment of self-regard is as the interaction of the conditioned emotional motives. The mastery, social approval, submission and love motives do not act separately, but with mutual modifications. The whole of these motives, which is something different from the summation of the motives taken separately, is the self-motive or sentiment of self-regard.

Purposes. A purpose is the symbolic representation of a motive. The tiny infant reacts to hunger merely by increased restlessness and activity, but the adult when hungry not only feels the drive, but can also state a purpose. He says, "I am hungry. I am going to get something to eat," thereby expressing the motive in word symbols and indicating the end-result by which he has learned to satisfy the drive. Purposes may be stated in words, or, of course, in other symbols such as inner vocalization, gestures, muscular postures and attitudes. Purposes involve not only the existence of a motive and its recognition, but also a knowledge of the end-result of activity by which the motive may be satisfied. Knowledge of the mechanisms involved in reaching the end-result is not always present in purpose. A student may purpose to solve a problem in mathematics, but may not completely know the method of arriving at the solution. Purposes are obviously learned be-

haviors as are all performances dealing with language and other symbols.

The concept of purpose assists in understanding behavior the satisfactions of which are remote or delayed. A well-formulated purpose to become a physician may involve years of preparatory work, much of which is of a nature not immediately satisfying to the basic drives. The postponement of immediate rewards for larger ones to be received at a later time is the epitome of intelligent and civilized behavior.

RESTATEMENT

The study of complex motives, sentiments and purposes has taken us far from the elementary biological drives that impel the organism to activity. A restatement of these fundamentals is desirable to prevent our being lost in a maze of verbal fancies. Primarily, the sources of activity are stimuli, especially those internal stimuli that take the form of visceral tensions. Drives such as those of hunger and sex, which are very directly visceral, are among the strongest of animal motives. Those visceral tensions that are native responses to overstimulation are emotional tensions. From these sources, and from primary adience, spring the strong universal motives such as mastery, social approval and conformity. These motives are drives that have been modified through learning by the extension of the range of stimuli that will arouse them and by the refinement of the activity resulting. Under normal conditions of life, physiological needs having been satisfied, the conditioned emotional motives, with adience and sex, are probably the most important sources of human activity. The complexity of human motivation, however, should not be ignored by the acceptance of any simplified scheme of a few motives. Habits, sentiments and purposes, all forms of learned behavior, also function as springs of human action, but they do so *only through the operation of the "lower" fundamental drives of physiological and emotional tensions.*

SUGGESTED READINGS

Chapters on motivation that supplement the present one by offering additional evidence and by giving varied, though still objective, points of view, are: Dashiell, *Fundamentals of Objective Psychology*, chap. 9; Dockeray, *General Psychology*, chap. 5; Woodworth, *Psychology*, third edition, chap. 12; and Murphy, *Experimental Social Psychology*, chap. 2.

The concepts of mechanism and drive are developed in Woodworth, *Dynamic Psychology*; and those of adience and avoidance in Holt, *Animal Drive and the Learning Process*. Holt, *The Freudian Wish*, combines behavioristic and psychoanalytic hypotheses in an attack on the problem of motivation. The effect of emotional tensions on the level of activity is described by Bagby, *The Psychology of Personality*, chap. 2.

CHAPTER V

ADJUSTMENT

THE ADJUSTMENT PROCESS

IF THE motives of organisms were all immediately and easily satisfied, there would be no need for adjustment. Various hindrances, however, tend to thwart the direct satisfaction of motives. A dog may not find food available and ready to be eaten every time that the pangs of hunger assail. The human, impelled by such motives as those of mastery or social approval, is frequently unable to reduce his drives immediately. He meets with thwarting in the form of material obstacles, of competition from other similarly motivated individuals, and of hindrances resulting from his own lack of ability. But a strong motive, once aroused, tends to keep the individual in a state of activity. Stimulated by the drive-tension, the individual makes one reaction after another until at length some response is found which will reduce the drive. This exploratory activity which begins when a drive is aroused and ends when the drive is extinguished is probably the most general pattern of animal and human behavior. It may be termed the *adjustment process*.

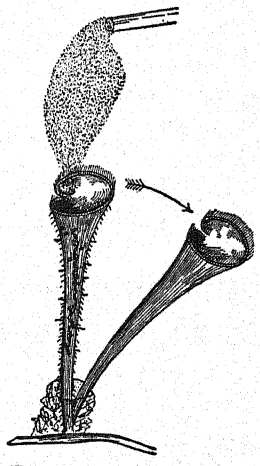

FIG. 14. ADJUSTIVE BEHAVIOR OF STENTOR

The ink is introduced near the mouth. The first response is bending away on the stalk. (Jennings, *Behavior of the Lower Organisms*, Columbia University Press, 1906.)

The Pattern of Adjustment. Adjustment to undesirable conditions in the environment is found even in some of the lowest animals. Jennings (1906) describes the behavior of the very simple organism *Stentor* in response to an experimentally induced annoyance. The *Stentor* (Fig. 14) is attached to the substratum at the lower end of its tube. At the top of the tube

are cilia or hairs that draw water containing food particles down into it. If a few drops of red ink are introduced into the water near the animal, a series of responses is initiated. First, the *Stentor* bends to one side, avoiding the ink. Second, if this is unsuccessful in avoiding the stimulus, the movement of the cilia is reversed, pushing the water away instead of drawing it in. If further adjustment is necessary a third response, of contraction into its tube, is made. If none of these responses avoid the red pigment, a fourth activity appears in which the *Stentor* releases itself from its support and floats away. This little organism has a repertory of four adjustive reactions which it makes, one after another, until readjustment is effected.

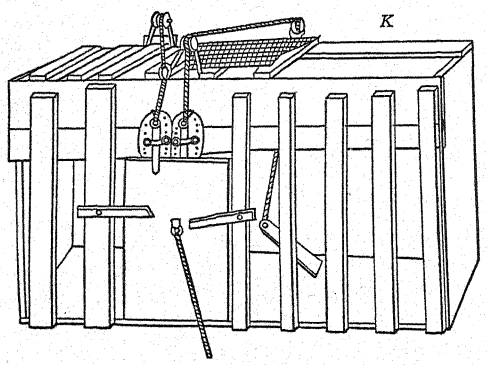

FIG. 15. PUZZLE BOX USED BY THORNDIKE

The apparatus shown is the difficult puzzle box *K*, which required three responses for escape, stepping on pedal, pulling loop of cord, and turning latch on door. Other easier boxes required only one response. (Thorndike, *Animal Intelligence, Psychological Review Monograph Supplements*, vol. 2, no. 4, 1898.)

One of the classic descriptions of behavior when thwarted is that of E. L. Thorndike (1898) based on some of the earliest experiments with animals. Thorndike placed cats in a puzzle box (Fig. 15), which was a cage so contrived that the performance of some act such as pulling a string or depressing a pedal would cause the door to open, releasing the confined animal. Young, healthy, hungry cats were used as subjects, since these had adequate drive to stir them to activity. Food was placed outside the box in view of the animal. The cats, on the whole, reacted vigorously to this situation. They tried to squeeze through the bars; they clawed and bit at portions of the cage; they struck at various parts of the apparatus. In the course of this varied activity, the cat by chance pulls the string, presses the latch or steps on the platform which releases the door. The problem is now solved and the animal gets out, thereby

reducing the drives aroused by the hunger and confinement.

Many similar experiments have been performed on human subjects. If the problem is very difficult in relation to the individual's ability, or if it is presented in such a way that previously acquired adjustive habits are unserviceable, varied motor activity similar to that of the lower animals will result. H. A. Ruger (1910) studied the solution of mechanical puzzles, consisting of units of wire and other metal pieces that would come apart when properly manipulated. Random movement of the pieces contributed much to success. The ability to make varied responses was important, some of the most conspicuous failures being due to the continued repetition of the same useless movement. When easier or more familiar problem-solving tasks are given to human subjects the amount of varied activity is reduced, a solution sometimes being made in one exploratory trial.

We do not have to go to the psychological laboratory to find evidence as to the nature of adjustive behavior. The pattern can be found in innumerable real-life situations. Let us suppose that a boy has kicked his football into the branches of a tree. He may try at first to jump up from the ground to push it out, but it is too high. Then he tries to climb the tree, but there are no low limbs to offer a suitable foothold. He tries to shake the tree, but it is too solid. If the motive to get the ball is sufficiently persistent and if the boy has enough ingenuity, he may at length arrive at a solution, as by throwing stones at the ball until it is knocked from the tree, or by securing a ladder. In this illustration the activity is initially more directed than that of the cat, but it consists in trying one reaction after another in response to the drive and the situation, until some mechanism is successful.

This same adjustment pattern may be seen in situations still more pertinent to the study of human conduct. If a clerk in an office is severely reprimanded by his employer, adjustive behavior is demanded. An emotional tension is aroused by the thwarting of mastery and approval motivation. Since the

clerk may not be able to combat the situation directly, he tends to discover other tension-reducing outlets. He may curse under his breath, imagine what he would do if he were in the employer's place, or plan a brilliant retort that he is unable to make overtly. The clerk may reduce his tension by a brisk walk around the block or by soundly and unnecessarily spanking his eldest child when he arrives at home, or by quarreling with his wife. In the broad biological sense these behaviors are not adaptive, for they do not solve any problem or assist the individual in overcoming his difficulty. But in the individual and psychological sense these are adjustive, for they satisfy or reduce a drive. Such adjustments may be termed inadequate, substitute or unreal, but they are adjustments none the less. They arise in the same manner and follow the same sequence as do the more effectively adjustive behaviors.

THE ANALYSIS OF ADJUSTMENT

The process of adjustment may be pictured as shown in Figure 16. An individual is proceeding in a course of motivated behavior (1) toward an end-result (4). When thwarted or blocked, he makes varied responses (2) until by some action (3) he overcomes the obstacle and proceeds as before. The principal steps in the adjustment sequence are therefore the existence of a *motive*, the operation of some *thwarting* which prevents its immediate satisfaction, giving rise to *varied response* leading eventually to tension reduction or *solution*. These steps will be considered separately.

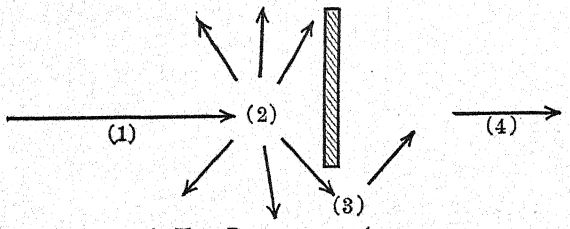

FIG. 16. THE PATTERN OF ADJUSTMENT

An individual is acting (1) in the direction of a goal (4), when blocked by an obstacle. He makes varied responses (2) until some response (3) gets around the obstacle and he is readjusted. (Dashiell, *Fundamentals of Objective Psychology*, Houghton Mifflin Co., 1928.)

Motive. The motives which operate in the adjustment proc-

ess are, of course, the various ones which were discussed at length in the last chapter. The arousal of any motive may be sufficient to initiate an adjustment sequence, but the strength and persistence of the responses will depend greatly on the intensity of the motive. Many everyday adjustments are made to very trivial motives of the habit variety, but if the drive is of a very transient sort it may disappear before a solution is discovered. The strong emotionally derived motives, such as those of the groups designated as mastery, social approval and sex, are of the greatest importance in adjustment problems. The blocking of such a motive leads to persistent activity and some solution must eventually be found, even though it is a very inadequate substitute.

Thwarting. By thwarting is meant a circumstance in which the accustomed mechanisms of the individual are unable to satisfy an aroused motive. If a cat is hungry and has before it a dish of milk, no adjustment is necessary. The activity aroused by the drive operates through the mechanism of a well-established habit. The cat eats and that is the end of it. Placed in the puzzle box, however, the cat's accustomed mechanisms fail. It is an unfamiliar situation and previously learned behavior is inadequate for solving it. A new mechanism must be discovered to reduce the drive. In human problems the pattern is the same. As long as established habits function smoothly no adjustment need be made. When a motive is aroused in a situation for which no ready-made solution exists, thwarting may be said to occur and diffused activity is the result.

Factors that thwart human urges may be divided, conveniently though arbitrarily, into three general classes. The simplest type of thwarting exists when a drive is blocked by an *environmental obstacle.* The cat's thwarting is obviously environmental. If a man's newspaper is not delivered on time or if his automobile stalls in the street, his activities suffer blocking because of material circumstances. The sex drives of prisoners are thwarted by the fact that no persons of the opposite sex are attainable. Laws and customs of society and the

activities of other persons, form environmental difficulties and arouse adjustive behavior.

A second class of thwarting is that which occurs because of some *personal defect* of the individual. For the sex motives of a young man to be thwarted because he lives on a lonely farm would be manifestly environmental; for these motives to be thwarted because he is so ugly, uncouth or stupid that girls avoid him would illustrate blocking by personal defect. Physical defects such as lameness or ugliness, mental defects, social defects such as lack of position or education, provide many of the obstacles which prevent the direct satisfaction of motives. It is obvious that environmental and personal thwartings are interdependent. A person of little ability or training in any given trait will succumb to a very small material obstacle. If an individual has high personal endowment, a very great obstacle may be overcome easily. The importance of the distinction between thwarting by environmental obstacle and by personal defect lies in the responses of the individual to his situation. If a person recognizes a thwarting as due to external causes the adjustive attempts are likely to be calm and constructive. Recognition of personal defect, however, implies a helplessness, a lack of available appropriate habits or qualities. An emotional response, typically of the fear type, is therefore aroused. This general condition of inner turmoil renders responses less effective and increases the need for adjustment. Another view of the rôle of personal defect in blocking is that it arouses a secondary chain of adjustive procedures. A personal defect means a thwarting of the strong and important self motives and leads to vigorous attempts to reduce the intense emotional tensions engendered.

A motive may also be blocked by *conflict with antagonistic motive.* A young woman much in love with a married man suffers from the thwarting of sex, by conflict with the social-approval motive. Even the cat in the puzzle box may, in a sense, show a conflict pattern when it has an adient impulse toward the food and an avoidant one toward the bars on which it has bumped its nose. The two conflicting impulses do not

cancel each other but give rise to increased tension and in turn vacillating and non-specific activity. This concept of conflict is a useful one in psychology if it is not interpreted in animistic terms. It is easy to get an erroneous picture of two motives fighting with each other inside the individual as if they were separate and living little demons. Nothing of the sort takes place, of course. The term conflict means that the individual confronts a complex situation to different aspects of which he has learned to make antagonistic responses. To the love aspect of the situation the young woman of the illustration has a tendency to make an approaching response toward the person she loves. The social-approval aspect of the situation directs her to make an avoidant response. Since the two antagonistic responses cannot be made at the same time the tension remains unreduced and adjustive activity is demanded. In a thwarting situation of the environmental type the individual has no adequate habit by which to respond. In the conflict situation, on the other hand, he has too many habits and the adjustment must be a selection or a compromise.

Varied Response. When an animal meets a situation in which its first habitual response fails to achieve a solution, it tends to make a number of other responses. The *Stentor* has four responses that it can make to a chemical irritant. The cat in the puzzle box has a larger number of alternative forms of activity. When first placed in the box it reacts with the habits that have been effective in escaping confinement on previous occasions. It scratches and claws at the bars and tries to squeeze or push through, which are very natural and sensible things for a cat to do under the circumstances. Only when these habits fail to be effective, because of the nature of the situation in which the cat is placed, does it show the less directed random activity described by Thorndike. If a man were placed in an utterly unfamiliar situation with strong motivation operating, his behavior might eventually become as random as that of the cat. The varied responses to a situation have often been termed *trial and error* reactions. When trial and error is unguided by past experience it is of the most primitive random sort.

An entirely novel situation is, however, extremely rare in human experience, especially after the first year or two of life. Hence human subjects do not usually "scrabble" like the cat when thwarted, but base their attempts on their past experiences and previously learned solutions. To a relatively new situation the individual responds by analogy, that is, by trying the responses which have been effective in similar situations in the past. If these trials are ineffective in reducing the drive they become "errors" and are usually discarded, still other mechanisms taking their place as new trials. The individual's past experience, his past successes and failures, are the principal determiners of his conduct in new situations.

So far varied response has been considered as a series of muscular activities, but this is not always the case. Instead of making physical attempts a man may indicate his trials by words or other symbols, and even judge on the basis of his past learning whether an indicated trial would be successful or not. If you are confronted with the problem of discovering the best way into town, you do not rush down one street after another trying to find the way by muscular exertion. You try the routes by naming them or by the use of other symbols such as gestures, postures and attitudes, or else seek the aid of the more obvious symbolism of maps, guidebooks or spoken advice. This process of thinking or reasoning is mental or symbolic adjustment and often leads to greater effectiveness in living. The chief danger of mental manipulations is that their result may not check with objective reality. Symbolic processes must continually be verified by reference to the material objects for which the symbols are substitutes, if mental adjustment is to be useful. In many cases symbolic behavior becomes an adjustive end in itself. To imagine the trouncing of a competitor who has just worsted one is almost as tension-reducing as actually administering the beating would be.

Efficiency in adjustment depends in great degree on the ability of an individual to continue varying his responses until success is achieved. In many instances, found both in the laboratory and in everyday life, the adjustment process is

hindered by excessive persistence in an unadaptive mode of activity. This tendency to be unable to vary behavior sufficiently results in what have been termed *persistent nonadjustive reactions*. Ruger found that the chief cause of failure to solve mechanical puzzles was the continued repetition of an ineffective attack. G. V. Hamilton[1] describes an incidental observation made in connection with his animal experiments in which the responses were strikingly nonadjustive.

> A much clearer example of gopher persistence in the face of disadvantage was obtained when I put 12 gophers into a large cage in which there were 12 small nests. Each gopher was driven into a nest and I hoped to avoid the slaughter that usually follows any effort to keep a number of these animals in a common cage. It was soon observed, however, that if a gopher, having left his own nest to secure food, invaded another nest after his cheek pockets were filled with grain and bits of carrot, a battle would ensue which would terminate only when one of the combatants was either dead or a helpless cripple. No matter how large and powerful the occupant of the invaded nest might be, nor how small the disputant of his occupancy, the invader did not seem to be deterred by the disadvantageous consequences of his persistence. He would dart into the nest, only to reappear in a moment, thrust out by its rightful occupant, re-enter and suffer a second expulsion, and so on, until exhaustion or death terminated his stupidly persistent repetition of the nest-seeking reaction. A little variation of reaction would have led him to his own nest or, at least, to one less well defended. Within a fortnight all but two of the 12 gophers were slain in this manner. The survivors were two large males who occupied nests at opposite ends of the cage.

In some more exact experiments, Hamilton subjected to a baffling situation a wide variety of mammalian subjects including rodents, cats, dogs, monkeys, apes and humans. Persistent repetitions of responses already tried and found ineffective were made by some subjects of all species. The factor most conducive to this persistent nonadjustive behavior was found to be the existence of an *emotional response*, called forth either by the baffling situation itself or by some concurrent stimulation. It

[1] Hamilton, G. V., "Perseverance Reactions in Primates and Rodents," *Behavior Monographs*, vol. 3, no. 2, serial no. 13, 1916.

was also found that animals of lower species showed the nonadjustive response more frequently than those of higher species, and that younger subjects, both animal and human, displayed this tendency more than older subjects. Another factor tending toward persistent nonadjustment was lack of motivation, described as "distractibility" and "feeble response."

The disorganized character of the emotional response is the most important cause of persistent nonadjustive reactions in human adjustive behavior. The phenomena previously described as emotional shock and diffusion lead to activity of persistent rather than rationally varied type. This is clearly seen in worry, which is a persistent fear reaction. The worrier makes the same useless responses again and again, even though they do not lead to constructive adjustment. The cure of worry involves breaking up the nonadjustive patterns of reaction and the resumption of active and varied responses which may lead to adjustment.

Solution. From the psychological point of view the sole criterion of what constitutes the solution of a problem is *tension reduction.* Any response that reduces the drive-tension and thereby brings the activity sequence to an end is a solution of the adjustment. When a hungry animal eats, the visceral contractions which acted as drive cease, and the source of activity is removed. Eating is therefore the solution of the adjustment pattern. Similarly, when an individual is motivated by an emotional tension or an emotionally-derived motive, any activity which reduces the emotional state is to him a successful response, and ends the sequence which started with the appearance of the drive. Various responses may, of course, vary in their effectiveness as tension-reducers. The unattractive girl's tension is most satisfactorily reduced by actual success in attracting men. It will also to some extent be reduced by such substitute adjustments as withdrawing from competition, becoming a man-hater, successfully competing with men in their own occupational fields, or becoming emotionally attached to members of her own sex. The most direct, or the most socially approved, method of reducing a ten-

sion is usually the most effective and satisfying, but if a direct solution is impossible others will be found. Substitute solutions are individually successful to the extent that they reduce the drive-tension which initiated the adjustment sequence.

ADJUSTMENT AND LEARNING

Learning by Trial, Error and Success. The adjustment process has thus far been described as a behavior pattern by which animals overcome obstructions. Attention has been directed to the process by which the first solution of the problem is

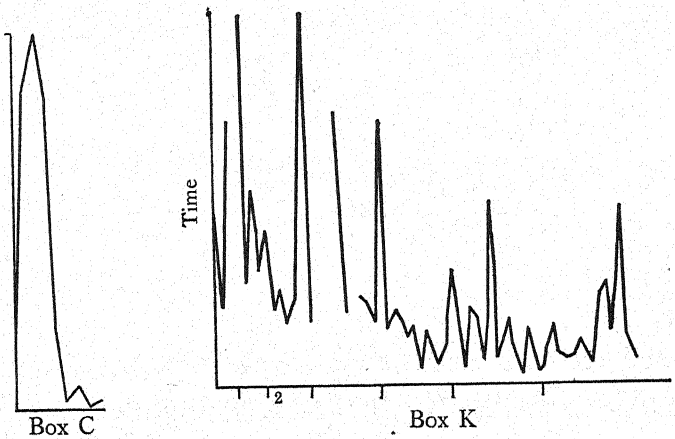

FIG. 17. TIME IMPROVEMENT IN ADJUSTIVE LEARNING

At the left is shown the sudden decrease in the time taken to escape from a simple and easy puzzle box *C*. At the right is a record of the times of escape from the difficult box *K*, showing very gradual improvement. The first may be taken to represent "insight," the second "blind" learning in adjustment. (Thorndike, *Animal Intelligence, Psychological Review Monograph Supplements*, vol. 2, no. 4, 1898.)

achieved, and this is a very practical point of view, for many problems are met once, solved, and are thereafter never encountered again. In observing a series of solutions of the same problem, however, another important phenomenon is discovered. Thorndike, in his experiments with cats, placed an animal in the same puzzle box again and again, noting the time required for escape in each successive trial. The results of some of these experiments are shown in Figure 17. In the series of trials, the animal learns to escape from the box. The early trials are characterized by the varied responses previously

described. In the later attempts the animal goes directly to the latch, operates it, and escapes at once. In some way or another, the successful solution is selected and perpetuated; the unsuccessful trials tend to drop out and be eliminated.

It is very easy to say that the animal remembers the correct solution, but this is no more a satisfactory answer to this problem of learning than it was for the conditioned reaction. Men learn many things, especially muscular acts, by trial, error and success, and while the verbal and symbolic processes known as memory may operate in some instances, they are not always necessary or present. The golfer improves from novice to expert by learning processes in which good responses are selected and inefficient ones eliminated, yet if he tries to remember just how to make a good stroke nothing but confusion results. In the case of learning by lower animals no evidence of memory is possible, and the use of the term tends towards disposing of the phenomenon by the verbal magic of naming it rather than explaining it.

The Law of Effect. The explanation of learning by trial, error and success proposed by Thorndike was that the successful responses were "stamped in" by the satisfaction resulting from the escape and food. This was later given a more exact formulation as the Law of Effect.

> ... When a modifiable connection between a situation and a response is made and is accompanied or followed by a satisfying state of affairs, that connection's strength is increased: When made and accompanied or followed by an annoying state of affairs, its strength is decreased.... By a satisfying state of affairs is meant one which the animal does nothing to avoid, often doing things which maintain or renew it. By an annoying state of affairs is meant one which the animal does nothing to preserve, often doing things which put an end to it.[2]

The Law of Effect has been a useful practical principle in animal psychology and in educational method. It is illustrated in a

[2] Thorndike E. L., *Educational Psychology*, vol. II, pp. 2 and 4, Teachers College, Columbia University, Bureau of Publications, 1914.

very direct manner in many animal experiments, such as that of Kuo (1922) in which a rat had to choose one of four entrances which led, respectively, to electric shock, confinement, a round-about path to food and a direct path to food. The response resulting in a painful shock was eliminated most rapidly, that leading to twenty seconds of confinement was given up a little less quickly. The long route to the food was eliminated still more slowly, but in the end all but two of thirteen rats took the short path. This experiment was usually interpreted as evidence of the effect of pleasure and pain or of reward and punishment on learning.

The processes underlying the Law of Effect are not clear, however, and few theories have excited more controversy. Many have objected to the statement that the satisfyingness or annoyingness of a response can have a direct effect on the neural connections involved. Thorndike implies that pleasure *per se* strengthens the neural connection and that pain weakens it, but this notion is entirely hypothetical. No such phenomenon has ever been observed and, indeed, it is difficult to conceive of such a thing neurologically. Some suggestions have been made that pleasure results in an increased flow of neural energy which flows into the pathways of the successful movements, while pain causes the reverse. This hypothesis is absurd, for the painful states actually give rise to greater activity, while pleasurable or successful ones cause relaxation, just the opposite of what would be required by such a theory. Another objection to Thorndike's statement is that it begs the question. If an animal is said to learn that which is satisfying, and then satisfyingness is defined as "a state of affairs which the animal does nothing to avoid, often doing things which maintain or renew it," the result is merely an assertion that the animal *learns* what he *performs*, and the concepts of pain and pleasure are entirely unnecessary.

A purely pain-pleasure theory of learning also fails to account for the fact that, especially in human affairs, many painful responses are selected and learned as efficiently as immediately pleasurable ones or even in preference to them. This can

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even be demonstrated experimentally as was shown by Peterson (1931). In this study adult human subjects learned a "mental maze," in which they acquired the ability to recite a sequence of numbers which had been presented in successive pairs, one of each pair being "right" and the other "wrong." Subjects learned by three procedures: (1) with only the verbal promptings of right and wrong given by the experimenter; (2) with, in addition, an electric shock accompanying each wrong response; and (3) with an electric shock accompanying each *right* response. Far from preventing learning, the painful results of giving the right answer became positive aids in reaching the goal, and the subjects so shocked learned more quickly than those who received only verbal prompting.

These theoretical objections and contradictory experiments point to a need for reformulating the Law of Effect. The influence noted is evidently not of pain or pleasure alone, but of the achievement of adjustment as against continued thwarting. The modified Law of Effect may be stated: *Animals tend to repeat and to learn those responses that lead to tension reduction and the completion of motivated activity.* No matter what theoretical difficulties are involved, this pattern is a very genuine one and some explanatory principles must be discovered to account for the evidence.

Closure and Insight. The German *Gestalt* school of psychology has arrived at an interpretation of adjustive learning not very different from that just stated. Koffka (1924), a member of this group, would define the puzzle-box situation not in terms of stimuli presented by the box, but in terms of the end-object, that is, of the animal's motive to get out. The situation is described as an "open" system that is incomplete or out of equilibrium from the point of view of the animal. The successful act brings about a *closure* or restoration of equilibrium. Learning is believed to proceed by an improvement of the perception of the situation. At first the latch is part of the perceptual *ground* while the food is the *figure* or portion of the total stimulation of which the animal is acutely aware. Learning consists in the enlargement of this figure to include the latch

as well as the food which are in the end "seen together" as the significant factors in the attainment of the goal.

The *Gestalt* school objects to the notion that the correct solution is gradually learned and that definite movements are "stamped in" by success. A number of experiments performed chiefly with anthropoid apes seems to support both of these contentions. Typically the apes learned by a suddenly effective movement preceded by relatively inactive periods. Thus in one experiment a large box was placed in the front of a cage so as to make it impossible for the ape to reach a piece of fruit placed outside. After regarding the situation for about two hours the ape suddenly picked up the box, moved it aside and reached for the fruit. No random responses that in any way concerned the box had been made previous to the final movement (Köhler, 1925). In many experiments learning occurred in one trial. After one successful attempt, the task was performed immediately when presented again. This sudden learning has been ascribed to a factor termed *insight*. If insight is defined as objectively as possible in terms of a sudden drop in the time taken to perform an act, it may be found in the learning of animals much lower than the apes. Some of Thorndike's learning curves for cats (Fig. 17) show quick drops when the problem was "simple, obvious and clearly defined," consisting only of pressing a single latch. Other experiments have found evidence of insight in rats. In Ruger's experiments on human puzzle-solution sudden improvement following long periods of random activity was the rule rather than the exception.

The contention that definite movements are not acquired in an invariable manner is supported by the work of Adams (1929), who repeated the puzzle-box experiments using Thorndike's method. He found that the successful solution, even when well learned, was performed in many different ways. In the case of one cat a string was pulled eight times with the teeth, four times with the paws, once conveyed to the mouth with the paw and then pulled with the teeth, and so forth. This result is more in keeping with the *Gestalt* claim that the solution

is a perception of the rôle of the string than with any theory of the stamping in of a successful motor response.

The *Gestalt* approach has had its share of criticism. Many psychologists have contended that insight is frequently the end-result of a long process of inadequately analyzed trial and error, rather than a unique perceptual experience. It has also been pointed out that Köhler had little information on the past history of his apes and that some of their quick solutions of problems might have been the reinstatement of old habits of unknown origin. Criticism is also directed at the fact that the *Gestalt* approach is a mentalistic one, using introspection as the basis for its principles of insight and closure. Introspection is rather unreliable when applied to man alone, and when the results of introspection are applied to the explanation of animal learning even greater error may result. The entire trend of modern experimental psychology is away from this method of attack.

It is no more clear how "closure" or "restoration of equilibrium" can cause learning than how pain and pleasure can influence improvement. In fact both the Law of Effect and the Principle of Closure can be regarded as useful and supplementary *gross descriptions* of adjustive learning, but neither is an *explanation* of the fundamental processes involved.

Adjustive Learning as Conditioning. A solution of the problem of trial and error learning that avoids the difficulties of both the pleasure-pain and *Gestalt* theories is to regard such learning as a special case of the conditioned reaction. The observations made by the adherents of both of these approaches can be explained by this method, which has the added advantage of describing all learning by one set of principles instead of requiring two or three.

A simple illustration given by Gates admirably introduces the concept that the Law of Effect is essentially a phase of the operation of the conditioned reaction.

> ... Suppose that after five cats have been taught to come to the call of "Kitty, Kitty," each is called singly, and No. 1 is given food and later caressed, No. 2 is caressed only, No. 3 is totally disre-

garded, No. 4 is sprinkled gently with water, and No. 5 is doused with water. Assuming that all have just learned to respond to the call and that other conditions such as hunger, fatigue, the satisfaction occasioned by the activity under way at the time called, etc., are approximately equal, they should all learn to come more promptly and surely by virtue of exercise, as they are repeatedly called. But will they? Cat No. 1, which was fed and petted, will probably come more and more surely and promptly; No. 2, which was merely petted, will probably continue to come but not so promptly as No. 1; No. 3, which was entirely disregarded, will probably continue to respond for a while, but less promptly and frequently, finally failing altogether; No. 4, which was sprinkled, will probably give it up more quickly than No. 3; and No. 5, which was doused, will probably very promptly show a failure to respond.[3]

It is quite evident that the behavior of the cats can be described as due to the Law of Effect. To describe their learning as conditioned approaching reactions in the cases of cats No. 1 and No. 2, and as conditioned avoidance reactions for cats Nos. 4 and 5, is equally appropriate and probably more fundamental. The weakening of the response of cat No. 3 who was ignored is an example of experimental extinction.

A more thorough analysis of learning in the more complex puzzle-box situation has been made by Holt (1931). The cat in the puzzle box is hungry, hence has an adient attitude toward the food because of its past experience with food as a tension-reducer. This adience is, however, inhibited by the bars which by past experience or recent exploratory attempts elicit avoidant or at least neutral responses. At this moment the cat lifts the latch, presumably by chance, and the door swings open. Two reactions now occur sufficiently simultaneously to satisfy the requirements for conditioning. First, temporally, is the response to the latch and second is the release of the inhibited adience toward the food resulting in a rush for the door. (It may be noted that the temporal sequence is correct for conditioning, the new or conditioned response first, the original, adient, response following after a brief period.)

[3] From A. I. Gates, *Psychology for Students of Education*, Revised Edition, p. 269. By permission of The Macmillan Company, publishers.

The conditioning that occurs is of adience toward the latch, as indicated in Figure 18.

A number of experimental observations support the theory that learning by trial, error and success involves conditioned adience. One is that the first thing usually learned in problem solving is the *locus of operations*, the place to manipulate something in order to achieve a solution. Ruger noted in the human experiments that the first step in improvement was the selection of the part of the puzzle that had to be moved to get the pieces apart. If a cat has learned to get out of a box with a latch in the right-hand corner and is then put into a similar box whose latch is in the left corner, it will often go to the right and claw about, ignoring the easily visible new latch opposite. The cat thus learns to restrict its operations to the profitable sphere. Adams's results previously cited, in which the cat escaped by movements that were varied yet all in the same place, are easily understood as examples of conditioned adience.

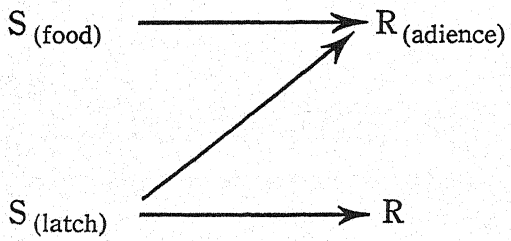

FIG. 18. THE LAW OF EFFECT AS CONDITIONING

The cat makes two simultaneous responses, lifting the latch and an adient response toward the food. The conditioning occurs as indicated.

Another confirmatory observation is that if the cat makes the successful movement but does not at once proceed to the food, no learning occurs. This sometimes happens when the animal presses the latch but, not seeing that the door has opened, goes on with other random movements for a little time. Such trials are not followed by improvement, showing that no learning has taken place. Since in this instance the advance toward the food is not sufficiently simultaneous with the making of the proper movement, the requirements for conditioning are not fulfilled, and the conditioned adience toward the latch is not effected.

In complex learning involving a number of steps as in learn-

ing the way through a maze, it has been noted that the errors near the goal (food) are eliminated first, those far from the goal, that is, near the entrance, persist until last. This indicates that the conditioned adience operates backward from the goal, that the last correct path is selected because of adience toward the goal, the next to the last by a subsidiary adience toward the last path and so on. One study has found that as a maze habit disintegrates from repetition without reward (experimental extinction), the errors first reappear at the end of the maze near the part where food was formerly given.[4] These findings throw some light on the nature of human habits which are fixed by postponed rather than immediate satisfactions, or which require preparatory reactions which precede the final tension-reducing consummatory response.

It is probable that trial and error learning also proceeds by the elimination of incorrect responses as well as the selection of successful ones. For example, the cat at first tends to claw at the bars, but this is unsuccessful and so results only in the giving up of the attempt to escape in this manner. The bars, by this process, are repeatedly associated with an avoidant reaction. In time, the sight of the bars sets up avoidance without actual physical contact. Smith and Guthrie (1923), who first suggested this principle, considered that this elimination of useless movements was all that was necessary to account for learning, for if everything except the correct response became avoided only this successful movement would remain. It is probable, however, that both positive selection in the form of conditioned adience and elimination in the form of conditioned avoidance contribute to the solution of problems.

Another concept that is used to describe trial and error learning is one known as *telescoping*, which means the elimination of unnecessary intermediate responses. A frequently cited illustration is of an individual learning to play the piano. At first a note in the music arouses a vocalization of the letter indicating

[4] Not all experiments indicate the order of learning cited here, but W. S. Hunter in his chapter on Learning in Murchison (1934) believes that those not confirming this tendency suffer from lack of proper experimental control.

this tone, then the tone-name in turn stimulates the visual finding of the correct key on the keyboard, and the seeing of the key stimulates the touching of it with the finger. As learning progresses, telescoping occurs and the first stimulus tends to call forth the last response directly, without intermediate processes. Similarly, in trial and error the random responses tend gradually to be eliminated and the final response is made directly to the initial stimulation.

Learning in Human Adjustments. The reason for the extended treatment of the theories of learning is because of the importance of this process in the acquisition of human adjustive habits. The *personality traits* of the individual are his persistent habits toward making certain kinds of adjustments rather than other kinds. Some writers in the past have attached much unnecessary mystery to the development of personality characteristics. That children often resemble their parents in tendencies to withdraw, to weep, or to fly into anger was formerly considered by some as evidence that such traits are inherited. This is not a necessary assumption. It is equally likely that when the child is placed in situations calling for adjustment the parental behavior acts to suggest mechanisms of solution which are tried, found successful and perpetuated. A certain amount of mystery has also been made to surround the maturation or "unfolding" of personality traits in the development of the individual. Lists have been prepared of the time and order of the appearance of certain behaviors at various periods of life. These concepts of development are open to several objections. In the first place, they are honored as much in the breach as in the observance when compared to actual observations of any one child; they are inexact and overgeneralized. A second criticism is that such schemes of development frequently emphasize "inner" factors to an undue degree. If children show similarities in the development of personality traits, this is as likely to be due to the commonness of their experiences and to their having individually solved the same problems in the same way, as to be due to innate invariability of growth. The principal factor in growth

or maturation is learning. It is the only factor aside from the physical development of the body, including, of course, the nervous system and glands.

It has long been recognized in clinical practice that individuals frequently acquire traits of character and personality without being aware of their origin, utility or significance. This fact is one of the causes of the popularity of the doctrine of "the unconscious mind." The hypothesis of the unconscious is rendered unnecessary if such occurrences are regarded as the end-results of *blind trial and error learning*. This theory of learning, emphasized by Thorndike in interpreting his experiments with cats, indicates that a habit may become fixed through a gradual process, without the presence of deliberation or insight. Humans often learn in this manner as may be seen even in the laboratory. One young woman in a class in experimental psychology solved a mechanical puzzle ten times, yet professed still to be ignorant of how it operated. Her time of solution had gradually decreased, indicating that learning was occurring, yet without understanding or insight. Psychologically similar is the case of a young man who has a vaguely fearful attitude and who withdraws from all social contacts. He knows only that being in a group makes him feel ill at ease, hence he avoids social participation. He does not know the origin of the trait or realize the use that he makes of it in adjustment, though the causes and development of his behavior may be found in his past experiences when these are psychologically investigated. The explanation of such personality traits as the result of the past modifications of the individual by trial and error learning without insight, is simpler and more scientifically tenable than the assumption that they are caused by the activity of an unconscious mind.

The contribution of the *Gestalt* approach to learning is also significant when applied to the development of personality. If an individual has *insight* into the nature and causes of his adjustive habits, this is regarded by the clinical psychologist as a hopeful sign indicating that his adjustments are in good order or that defects can be remedied with relative ease. Clinical

workers have used the term insight independently of its application to the *Gestalt* theory, but with essentially the same meaning as that applied by the German theorists. Insight signifies a condition in which the individual perceives the relationships between his motives and his behavior, in which his adjustment is unitary or integrated. If an individual has acquired personality defects through the relatively blind trial and error of his past adjustive attempts, a disclosure of the source of the defects often assists in their elimination. This is not a supernatural reformation of the patient's personality. It is simply a case of sudden learning with insight as may be seen in cats and apes and in the psychological laboratory as well as in the more intricate problems of adjustment to life's situations.

The formation of personality is a vastly more complex process than is the acquisition of the habits that have been experimentally investigated. It proceeds over a long period of time and is the result of the individual's responses to many situations. It is wrong to oversimplify the problems involved in the acquisition of adjustive habits; it is equally wrong to make a mystery of them and fail to recognize their essential psychological origin in the operation of simple patterns of learning. If in a thwarting situation a child has successfully reduced his tension by withdrawing, he becomes predisposed to withdraw on other occasions when thwarting occurs. If he has effectively reduced a tension by overaggressive behavior, or by a tantrum, these successful solutions become learned and are likely to be tried in all situations of similar nature.

The way in which an habitual form of adjustment may be acquired by varied response and tension reduction is very aptly illustrated by a case that Holt quotes from Preyer, with comments of his own.

> Two children suffered, during their first six months of infancy, from eruptions of the skin. At first, their arm movements were too unco-ordinated to enable them to scratch the affected parts. But they soon learned to reach up to their faces, which were accessible because uncovered, and then, "At every moment when they were not watched the hands went up to the head, and the skin, even

where healthy, was rubbed and scratched. These scratching movements cannot be inborn and must be acquired. An accidental contact of hand and head resulting in a decrease of the itching sensation must necessarily induce a preference for the hand-to-head motion, over all other movements." That is, the restlessness produced by a mild annoyer led to trial-and-error learning and alleviation of the annoyance. "Now this reflex reaching toward the head led, as a further consequence, to a peculiar association in one of the two cases. (Observations on the other child are lacking.) As, namely, the eczema healed and finally disappeared, the habit of lifting the arms and carrying the hands to the head persisted, and reappeared whenever the child met anything disagreeable or whenever it manifested opposition, as when it did not wish to play or did wish to stop playing.... In this way peculiar expressive movements originate from acquired reflexes." [5]

Here a personality trait of unusual nature has been caught in the making. To a less acute observer the tendency of the child to put its hands to its face whenever in need of adjustment might have been inexplicable or perhaps would have been considered as inherited. In the same manner other persons acquire general tendencies to go away alone, to fight, to pout, to lie, to twiddle their fingers, or to show fear, whenever they are thwarted. These personality and character traits are the residuals of the individual's past experiences and of his past tension-reducing solutions of problems.

THE QUALITY OF ADJUSTMENT

Varieties of Adjustment. Most human problems admit of more than one solution. If an individual meets thwarting by failing in his work he can reduce the tension by greater effort, by finding more suitable employment, by excuse making, by developing an illness which explains away his failure, by lording it over his family, or in countless other ways. It is generally agreed that some of these adjustments are better than others, yet not all of them can be precisely classified as good or bad. There is an unbroken continuum of the quality of adjustment,

[5] Holt, E. B., *Animal Drive and the Learning Process*, pp. 225–226, Henry Holt and Co., 1931, quoting W. Preyer, *Die Seele des Kindes*, pp. 165–166. 1884.

from the worst to the best that an individual can make to a given situation.

Many examples can be cited of situations to which adjustments of varying quality can be made. A college student fails a course. This offers thwarting both to the vocational plans of the individual and to his sentiments of self esteem. The motive-tensions which would have been reduced by successful passing of the course remain undiminished. The student *must* adjust in some way. He may consult his instructor to find out why he failed and how to remedy the situation. If he failed for relatively irremediable reasons he may turn to other work in which to find satisfaction, or he may change his curriculum or his life plans. These adjustments, by common opinion, would be good ones. Or, the student may seek success in other fields, as in athletics or extra-curricular activities. He may seek situations which bring into play his strong characteristics, such as social ones, and avoid situations which give rise to thwarting. The student may daydream of imagined successes, or he may worry. He may claim that the course which he failed was useless, or that the instructor was biased, thereby verbally reducing the tension which his failure left present. The later named adjustments are in various degrees undesirable ones, according to the usual judgments.

Good Adjustment an Ethical Concept. The problem of defining what constitutes a good adjustment is a very difficult one, for which there is no single answer. Good and bad are essentially ethical concepts and have no place in the realm of science. If a physiologist studies the nature and causes of tuberculosis and the effect that various treatments have on the disease, he is entirely a scientist. The physician who treats the disease, on the other hand, uses not only the scientific findings but also an implicit ethical hypothesis, that to have tuberculosis is bad, and to be cured of it is good. You exclaim, "Of course!" yet the fact that everyone agrees with the physician's point of view does not remove it from the field of ethics and place it in that of science. As a scientist, the psychologist can ignore any consideration of good and bad and can think of a so-called mal-

adjustment as a certain kind of behavior, the correlates and antecedents of which are to be investigated. Since in this book the scientific approach is predominant over the practical one, the ethical problems could be ignored without disturbance to our logic. To the psychiatrist or clinical psychologist, however, a maladjustment is an ailment to be remedied. Like the physician, he is called upon not only to investigate but also to judge and to modify behavior.

An Attempt at a Psychological Criterion. Even though the definition of what constitutes adequate and inadequate adjustments is not strictly a function of science, at least a brief orientation on the question is desirable. Otherwise, many readers will be guided only by preconceptions or off-hand judgments. One possible theory is that good adjustments are those which most fully and most directly satisfy the drives of the individual. This is obviously true for the adjustments to physiological needs. To eat, to drink and to breathe are the only good responses that can be made to the arousal of these appetitive drives. This concept is, in a limited degree, applicable to the field of psychological motives. The reduction of the mastery drives involves overcoming an obstruction. Any behavior that reduces tension by a substitute adjustment which does not really overcome the obstacles that are blocking the fundamental motives, is only partially satisfying. Such substitute behavior is therefore a maladjustment.

In considering the individual satisfaction criterion a dilemma is likely to arise. At first thought, it would seem that the fullest and most direct satisfaction of the mastery motive would be to fight, overcome and torment one's rivals. The most direct satisfaction of social-approval motives would be found in constant petting and praising. Yet it is generally held that these are very inferior forms of adjustment. The difficulty is that such an interpretation of individual satisfaction considers only one motive at a time, ignoring the fact that the unlimited satisfaction of one drive may severely thwart the achievement of other ends. Exactly this unevenness of satisfactions underlies many if not all cases of maladjustment. The individual

who is one-sided in his motive satisfactions, who seeks to reduce one type of drive at the expense of thwarting the rest, is just the kind of individual whom psychological clinics recognize as being in need of assistance. This observation leads to the most nearly psychological criterion of the quality of adjustment. For a person to satisfy all his motives with regard for their functioning as an interrelated system, is good adjustment. To achieve this requires *unified and integrated behavior*, the presence or absence of which provides what is perhaps the clearest distinction between good or poor adjustments.

In defining good adjustment, the influence of the social group and of societal customs cannot be ignored. The individual must do his adjusting in an environment consisting of other individuals who have their own personalities, motives and mechanisms of behavior. For one person to satisfy his motives without respect for those of others, results not only in probable retaliatory measures which react badly on the errant one, but also in the loss of co-operation for the mutual achievement of aims. Mere conformity is not itself a sole condition of good adjustment, nor does the psychological practitioner seek to make all persons alike, as is often thoughtlessly suggested. The concept of individual integration must, however, be supplemented with one of integration in society. When the interrelated motives of a person are satisfied without undue emphasis or slighting of any one motive, and when this is achieved with consideration for the adjustments of other persons, then a state of good adjustment may be said to exist.

SUGGESTED READINGS

The concept of adjustment has been applied to a wide variety of psychological problems. Many interesting illustrations of adjustments by single-celled animals are given in Jennings, *Behavior of the Lower Organisms*. Essentially the same process operates in thinking and reasoning about the problems of everyday life, as Dewey, *How We Think*, indicates. An application of the adjustment process to school learning may be found in Jordan, *Educational Psychology*, chap. 3. Social adjustments are discussed by Allport, *Social Psychology*, especially in chap. 14. Woodworth, *Dynamic Psychology*, chaps. 7 and 8 uses the concepts of adjustment in the explanation of both abnormal and social behavior. Fisher, *Introduction to Abnormal Psychology*, chap. 5, bases an explanation of serious mental disorders on the pattern of adjustment.

For a more detailed description of Thorndike's theory of learning, see his *Education Psychology*, vol. II, and his more recent *Human Learning*. The *Gestalt* point of view is presented by Koffka, *The Growth of the Mind*, and by Wheeler, *The Science of Psychology*, chaps. 9–11. Holt, *Animal Drive and the Learning Process*, elaborates the theory of the conditioned reaction as the basis of trial and error learning.

PART II
VARIETIES OF ADJUSTIVE BEHAVIOR

CHAPTER VI

ADJUSTMENT BY DEFENSE

ADJUSTMENT MECHANISMS

ADJUSTMENT mechanisms are acquired habits by which individuals satisfy their motives. All persons experience thwarting, and almost none have abilities or qualities that permit a successful direct attack on all problems; hence adjustment mechanisms are normal and necessary in the life of every individual. To adjust is as normal as to eat or to sleep, which activities are, in a sense, themselves adjustments. Normal adjustment is effected in most cases by mechanisms that are identical in nature, though not in degree or quality, with those underlying maladjusted behavior. Nothing mysterious or obscure is implied by the term mechanism. Mechanisms are not disorders or symptoms of disorder; they are merely the forms of response that individuals make to the total situation of their drives and their opportunities for adjustment. The study of varieties of adjustive mechanisms is as much the study of normal behavior as of that which is unfortunate or inadequate. All kinds of adjustments may serve the normal course of living, as may be recognized by observing one's self and one's neighbors. Only those habits of adjustment that fail to satisfy individual and social needs are maladjustments. A description of the typical ways in which people adjust is valuable for the understanding of human nature in general, as well as for the treatment of conduct disorders.

The Classification of Adjustments. In keeping with a procedure found to be convenient in all scientific fields, it has been customary to assign names to many of the most typical modes of adjustment and to group or classify these according to their relationships. Unfortunately little agreement exists among psychologists as to how adjustive mechanisms should be named,

and even less on the question of classification. A study of the indexes of seven recent books in the field of mental hygiene has revealed that no fewer than sixty-five different mechanisms of adjustment have been distinguished by name. Of these only two, Daydreaming and Repression, are cited in all seven books. Two more, Rationalization and Compensation are named by six of the seven authors. Four types of adjustment, Anxiety, Dissociation, Hysteria and Phobias receive five votes each, while Defense, Fears, Identification, Inhibition and Regression are each noted four times. Of the remaining mechanisms, six are mentioned by three authors, twelve by two, and thirty-four varieties by one only. The reason for the lack of agreement shown in naming varieties of adjustment lies in the complexity of human habits. Almost any response of which an individual is capable will be used by him at some time as a means of substitute motive-reduction. The number of habits that even a single individual may possess defies enumeration, and classifications of these habits into types are inevitably arbitrary and derived chiefly from opinion.

The practical problem of describing modes of adjustment remains, however, and must be solved even though arbitrarily. Several schemes for grouping adjustive habits might be suggested. Adjustments might conceivably be classified by the *kind of person* employing them. This approach runs into difficulties in the attempt to distinguish personality types and in the fact that most persons employ different adjustive habits at various times, often of very divergent character. To classify adjustments according to *cause* would seem to be desirable, but causes are often so complex as to be undeterminable, and the same immediate influences result in very different kinds of adjustment in different people. The remaining possibility is to group adjustive mechanisms according to the *mode of response* displayed. This classification has a certain amount of objectivity and definiteness, even though it may be accused of superficiality. Five groups of adjustive responses may be distinguished on this basis. These groups represent only a convenient arrangement arising from the practical necessity of

making *some* division. They should not be interpreted as fundamentally distinct types of adjustment.

1. Adjustment by defense. This chapter will describe those adjustment mechanisms characterized by excessively aggressive conduct, usually involving group participation often of an undesirable or antisocial character.

2. Adjustment by withdrawing. In this group will be considered the defensive adjustments that show a marked failure to participate in social activity, either in the form of passive seclusiveness or of active refusal. These are usually accompanied by substitute satisfactions of an individual and symbolic sort in the form of phantasy.

3. Adjustments involving fear and repression. Although fear is a factor in all maladjustments, it appears with special prominence in phobias, which are irrational specific fears. Repression, another general characteristic of maladjustment, will also be investigated in this section.

4. Adjustment by ailments. The most spectacular forms of adjustment are those which ape physical ailments, including pains, paralyses and cramps. These mechanisms constitute a large part of the field of the psychoneuroses and lie in the borderland between psychology and medicine.

5. Persistent nonadjustive reactions. If all forms of adjustment fail, the individual may show states of exhaustion, anxiety and "nervousness" which are the result of an unreduced emotional tension.

DEFENSE MECHANISMS

A Case Study. James G. was referred to a psychological clinic because of severe school conduct difficulties. The principal of his school reported general bad behavior in the schoolroom, constant teasing and bullying of younger children, and occasional petty thievery. His conduct had been at a very unsatisfactory level for two years. During the current term James, now twelve-and-a-half years old, has been placed under three teachers in succession, the school being a large one where

the several sections of each grade made this possible. The first teacher could not control him and neither could the second, but the third succeeded by repressive measures in keeping him from too greatly disturbing the peace of the school, so he has stayed with her.

A careful inquiry revealed the details of James's conduct. In the classroom he shows no seriously delinquent behavior, but has persistently made small infractions of discipline of an aggressive nature. He stamps on the floor when other pupils walk in the aisles; he talks back to the teacher; he engages in petty trippings and scuffles. None of this conduct is in itself indicative of severe maladjustment for nearly all school boys do similar things. It is the persistent and frequent nature of James's misdemeanors which make him the despair of teachers, and of interest to psychologists. Out of school he plays little with other boys of his own age but is frequently found bullying and teasing younger boys. James pushes or hits a smaller boy without provocation, and delights to chase him screaming home to his door. Thefts include taking possessions of little value from his fellow pupils, and some stealing of nuts, fruit and candy from neighborhood stores. The things stolen are often given to or shared with other boys.

Clinical Data. At the clinic, James presented an appearance which gave no indication of his unusual reputation as a trouble-maker. He was a pale, slim boy, rather tall for his twelve years. His manner was friendly and he co-operated well in the tests given, seeming to be delighted to be the center of so much attention.

The physical examination revealed no defects needing correction. His general condition was good, sight and hearing were normal, and no glandular disturbances were suspected. In the individual intelligence test, James secured a mental age of thirteen years, three months, and an intelligence quotient of 107. He was thus slightly above average in mental ability. The standard tests in school achievement told an even more favorable story. His educational age was fifteen years, one month; educational quotient 121. He showed superior per-

formance in all subjects, being most able in reading and spelling and least above normal in arithmetic. These findings eliminate the conclusion which teachers too often make without evidence, that a disagreeable pupil is stupid.

James's early school history was not available, as he had transferred to his present school two years ago. Up to that time the family had lived in a suburb where, according to the parents' account, James had done well in school and had presented no difficulties. The school records now available show that he entered the lower half of the fourth grade at age ten years, three months. His school marks for the first three semesters were good and for the last semester, passing. The conduct record, as shown by a "deportment mark" has been uniformly unsatisfactory. At age twelve years, five months, James should be in the second half of the sixth grade, according to normal progress. His mental age of thirteen years, three months, corresponds to the upper half of the seventh grade, and his educational age of fifteen years, one month, shows an achievement slightly greater than that of the average pupil who has completed the eighth grade. Since he is now placed in the lower sixth grade, James is a half grade retarded for his age, one and a fraction grades retarded for his mental age, and about three grades retarded in relation to his educational age as shown by the achievement tests. The principal states that James is conspicuous in his classes for lack of attention and concentration. No wonder! He has already mastered the arithmetic of a grade in advance, and reads with the skill of most high-school pupils. James's attendance is now quite regular. Last year there was some trouble about tardiness which made him unpopular with his classmates because of a promptness contest between rooms, but this has been remedied.

The G. family lives in an apartment in comfortable circumstances. Mr. G. is a salesman with an adequate income. He is away from home much of the time, and his influence on James is small. Mrs. G. is a large, strong woman, who was born in Norway, but who migrated to this country in childhood, with an older sister. No grandparents complicate the scene,

as Mr. G.'s parents are dead, and Mrs. G.'s have never come to America. James has a younger brother, Charles, who is ten years and ten months old. Charles is James's constant companion, and has lately shown some of James's behavior traits.

Mrs. G. furnished the psychologist with a history of James's development. He had always been a rather thin and poorly nourished child. He had measles, chicken pox, and whooping cough before he was six, all of them rather severely. His start in school was delayed a half-year because of the last disease. His tonsils were removed at age eight. The most striking fact was James's history of accidents. His right arm has been broken twice, at age seven and age eight, and his left leg was fractured at age nine and a half. All of these injuries occurred while he was engaged in rough play with other children.

James sleeps regularly from nine until seven-thirty. His eating habits are normal. He has dressed himself since he was four. No sex habits are known to his parents or teachers.

James's play is mostly solitary or in the company of his younger brother. He prefers indoor games or cards to outdoor play, but gets a fairly adequate amount of exercise by roller skating and running around. James's real passion is for the movies. He is allowed to go only once a week, but each movie is talked about for days afterward. His favorite pictures are "Westerns" and other films of adventure. James says that when he grows up he would like to be "a cowboy in the movies." He has no other vocational ambitions, and seems quite unaware of the inappropriateness of his aim for a rather puny city boy. Another recreation is extensive reading. He reads an average of two or three books a week, chiefly of the boy-adventure type, such as the Tom Swift series. When asked why he does not play football or baseball, James replies that he just doesn't like to, but afterward volunteers that he guesses it is because he was hurt so much. His mother discourages his playing with other boys, partly from fear of his being hurt again, partly because of his inability to get along peaceably in a social group.

Interpretation. The most important cause of James's conduct difficulties probably lies in his reaction to his physical

condition. Due to frequent injuries, breaking an arm twice and a leg once, and also because of his general lack of physical stamina, James has developed habits of avoiding normal participation in the rough and tumble play of boys. This fear and avoidance of the usual outlets for activity has led to a need for substitute satisfactions. He has sought to reduce the normal motives of mastery and social approval by the activities of bullying, teasing, showing off and petty thievery. He also finds adjustment in the imagined satisfactions of fiction and the movies. Since these mechanisms reduce his drive-tensions they become fixed and habitual. As is always observed in practical case studies, James's difficulties are complicated by other factors. His lack of an intimate relationship with his father and the overprotective attitude of his mother make it harder for him to develop manly qualities and achieve normal adjustment. His misplacement in school, which leaves him with children who are his mental inferiors, prevents school achievement from becoming an adequate outlet for his needs.

The treatment that was recommended for James G. sought to eliminate the principal cause of his maladjustment and to remove several of the contributing factors also. He was encouraged to play with boys of his own age and his mother was informed of his need to do so. In order to promote desirable social contacts he was enrolled in a troop of Boy Scouts and in gymnasium classes in a Y.M.C.A. The scout master and the gymnasium director were informed of his problems and urged to make it easy for him to join in the group activities. Boxing instruction was especially recommended as tending to build up his confidence in his physical adequacy. The school was advised of his superior accomplishment and of his need for more challenging academic standards. As a result, he was given an extra promotion at once. The work of the higher grade proved to be more stimulating, and placement in a new group gave James the opportunity to revise his school habits in the company of pupils who did not expect mischief from him. These remedial measures are very different from those of the old-fashioned "common-sense" view, that probably would have

dictated retribution or punishment. The treatments of giving boxing lessons to the bully, and of promoting the troublesome pupil instead of failing him, were effective because they were based on a knowledge of the boy's fundamental needs and of his inadequate past attempts at adjustment.

Defense and the Inferiority Attitude. The behavior problems of James G., including bullying, attention getting, unruly conduct and certain kinds of stealing, are examples of defense mechanisms. These are among the most common methods of tension reduction. When real achievement in a strongly motivated direction is thwarted, pseudo-achievements, sometimes of an aggressive character and sometimes imaginative, appear to act as outlets for the drive. The occurrence of defense mechanisms is usually indicative of thwarting in the form of a personal defect. Certain qualities of the individual result in social disapproval or in the thwarting of self-assertion or in both. This arouses a fear reaction and leads to inco-ordinated or unintegrated attempts to overcome the defect by the over-assertion of adequacy. The defense mechanisms, by reducing the fear tensions and satisfying the original drives, lead to an adjustment of a sort. Since all persons have deficiencies of varying degrees, defensive behavior is a normal and almost universal human trait. Only when defense mechanisms become exaggerated in character and excessive in scope do they present serious psychological problems.

Persistent and intense defensive behavior is usually caused by a general *attitude of inferiority* on the part of the individual affected. The attitude of inferiority is a generalized habit of reacting with a strong fear response to all social situations, particularly to those involving competition or criticism. Like all habits of personality, this attitude is acquired by a long sequence of experiences extending in almost all cases into the childhood of the individual. The acquisition of an inferiority attitude is a typical process of adjustive learning. If competitive situations have repeatedly been accompanied by adequate stimuli for fear in the form of painful failures, the individual learns to avoid those forms of competition in which he will fail.

He turns, therefore, to substitute activities as satisfactions for his drives. In time, when the attitude of inferiority has become well fixed, no attempt is made to attack problems directly. The defense mechanisms that have been found necessary in past difficulties will be applied to new situations without first trying to discover a more adequate solution. Another important source of inferiority attitudes is the excessive use of the pain-punishment technique of discipline by parents and teachers. If a child is subjected to painful punishment and at the same time is scolded and criticized, he tends later to react with fear to the criticism alone, and even to respond to self-criticism in the same manner. A similar cause of the attitude of inferiority is the circumstance of a child being persecuted by his playmates in which process fears of criticism and of competition are conditioned.

The individual who has acquired a conviction as to his own inferiority shows this attitude in many of the incidents of everyday life as well as in the more pronounced mechanisms of defense. Bagby (1928) gives a useful inventory of the symptoms of the attitude of inferiority. Such an individual shows a marked *sensitiveness to criticism.* He resents any direct or implied evaluation of his activities that puts him in an unfavorable light, and is unable to react constructively to corrections. A student with this habit is likely to devote much effort to prove that his solution to a problem is a correct one, when he might more profitably search for a better method of attack. The inferiority attitude is characterized by *ideas of reference,* in which the individual applies all criticism to himself. He assumes that the chance laughter or whispered comments of others that he overhears is being directed toward him and that his actions are being observed by everyone. *Seclusiveness* is likely to be noted. Persons with attitudes of inferiority frequently cross the street to avoid meeting people, and otherwise shun social groups. An apparently contradictory but really consistent trait is *overresponse to flattery.* Since there is a great need for the expression of adequacy, anyone who will support it will be given a welcome reception. Hence individuals with

inferiority attitudes are often easily led by those who will gratify their needs for praise. In athletics the long standing tradition of suspecting the grand-stand player who deliberately seeks applause is well founded, for he often is trying to cover up a deficiency. Another symptom is a *poor reaction to competition.* All contests are entered for the purpose of winning, and the individual plays in dead earnest. Frequently he seeks to compare his skill only with those whom he can defeat easily or else with those of renowned ability whom he could not be expected to defeat. A *tendency to derogate others* is another indication of an attitude of inferiority, for in pointing out the faults of other persons the individual minimizes his own defects. In moderate degree all of these symptoms are characteristic of human nature in general. This is because all persons react to their defects with some degree of fear. The difference between the normal state and one of a marked attitude of inferiority is one of magnitude of response, not of kind.

Typical Personal Defects. Any variety of inferiority — physical, mental or social — may act to thwart the attainment of motives. The important consideration is not the objective existence of personal deficiencies but the way that the individual reacts to their social evaluation. The more severe attitudes of inferiority arise from defects in traits upon which social approval most strongly depends. For a boy to be puny usually engenders more inferiority than for him to be clumsy, since adequate size and strength is more esteemed among groups of boys than is skill.

In enumerating typical personal deficiencies that give rise to defense mechanisms, physical or organic inferiorities should probably take first place. This is not because of any inherent characteristic of physical traits as such, but because of the important rôle that strength plays in the lives of children. As has been seen in the foregoing paragraphs, most adult attitudes of inferiority are not the result of adult thwartings, but are residuals of habits of fear acquired in childhood. Among boys the more important causes of inferiority attitudes include frailness, especially so because of the persecution that boys almost in-

evitably apply to the weak member of a group, lameness and other structural anomalies, as well as injuries and other repeated painful experiences such as were apparent in the case of James G. Clumsiness, lack of skill, and inability to compete in games also frequently act in the same manner. Among men the same characteristics may give rise to attitudes of inferiority, and sexual inferiority is to be added to the list. Real or imagined defects of sex organs or of sex functions frequently precipitate varied defensive behavior. In the case of girls and women the same inferiorities as were enumerated for boys are important, but to a lesser degree, since the social rôle of girls somewhat condones weakness and does not demand strength to the extent that it is expected of boys. On the other hand, ugliness and unattractiveness are stronger causes of inferiority attitudes in the female sex than in the male. Sometimes the defenses against inferior pulcritude are directed against men only. It is proverbial that the prudish reaction, a defense against sex, is more characteristic of unattractive women than of comely ones.

Mental defects may be important precipitating causes of defense reactions, but they usually so operate only when the mental inferiority is evidenced by invidious comparison between persons in close contact, as between brothers or sisters or between parents and their children. In one case, a girl of seventeen displayed marked defensive reactions against members of her family, making remarks obviously intended to hurt the feelings of the others, and engaging in eccentric behavior which directed attention to herself. This girl had dropped out of high school after having shown little scholastic interest or aptitude, while her two brothers and two sisters had all had brilliant academic careers. An intelligence examination showed that she was of normal mentality, but the available information indicated that the other members of the family were undoubtedly very superior in intelligence. Thus the girl had no mental defect in relation to the average person, but was inferior to her sisters with whom she was most closely compared. This situation arises in many families in which children vary in ability

or in which the aptitude of a child is not sufficient for the plans that the parents make for him.

Not all inferiorities which call for adjustment are in relatively unmodifiable traits such as physique and intellect. Many serious inferiority attitudes are created by scorn, ridicule and inappropriate methods of discipline without the operation of any objective deficiency. Maladjusted parents sometimes rain punishments or hurl invectives at their children, these serving as defensive habits arising from their own adjustive difficulties. The maladjusted teacher is an especial menace in this respect, for classroom tyranny, acting as an outlet for the teacher's own thwartings, may augment the inferiority attitudes of pupils already having a start in this direction. A considerable number of adolescent adjustment problems arise from the father and son relationship. Even a quite well meaning father, by making all of the son's decisions for him, by pushing him to succeed in school beyond the limit of his ability or by impressing him with the superiority of adults, may cause a defensive attitude toward himself and toward authority in general that will be manifested either in timidity or rebellion. Lack of security, either in the form of being unwanted in the family or of being unable to plan a safe economic future, may precipitate attitudes of inferiority in children and adolescents.

Another cause for inferiority attitudes, very common among adolescents, is a sense of guilt arising from sexual phantasies and conduct. Young people who have been reared in homes where a narrow morality is closely bound to religious beliefs suffer especially from this difficulty. They believe that their normal curiosity and interest concerning sex is a sign of depravity, that is, of their moral and religious inferiority. Often this situation is accompanied by general parental sternness that has reinforced the fear of sex, and by a lack of the usual desirable substitute outlets for sex tensions found in social activities. Boys who masturbate are especially likely to feel inferior and unworthy. This attitude arises from the strong social disapproval of the practice, and is increased by misdirected warnings of parents and by quack pamphlets that cause a boy incorrectly to believe

that he will lose his manhood or become insane. The attitude of guilt and inferiority leads to defense mechanisms sometimes of an aggressive nature but more usually of withdrawing types. The shyness and seclusiveness often noted in persons with autosexual habits are not the result of the physiological processes involved, but are adjustments to the attitudes of inferiority engendered.

The Development of Defense Mechanisms. When an attitude of inferiority is in the process of formation, the individual is learning to react with fear to criticism and to competition with others. The first response is likely to be one of simple withdrawing, but soon a number of defenses will appear that are characteristic of the *varied response stage* of adjustment to inferiority. In the early stages of adjustment the defense mechanisms are numerous, varied and relatively temporary. The individual's behavior is typically that of trial and error. Any response that will reduce the tension will be tried, and markedly different forms of behavior will be found in the same person from time to time. In one instance he will be blustering and overaggressive, in another he will attempt to explain away his shortcomings, and on another occasion will be shy, seclusive and submerged in imaginary satisfactions. It is evident that James G. is in this primary stage of adjustment, as he shows almost all of the known forms of defense mechanisms.

As various forms of defense are tried, some will be found more satisfactory or more applicable to the individual's situation than are others. The more successfully tension-reducing mechanisms will be selected in this course of adjustive learning, and the others will be discarded. This results eventually, without any sudden change, in the *fixed response stage* of adjustment to inferiority. In this fully developed adjustment the defense mechanisms are well-organized habits, few in number, consistent, elaborate and likely to be permanent. When such complete defensive habits have been established, many of the primary symptoms of the attitude of inferiority may be submerged and difficult to discover. The individual no longer seems shy and submissive, on the contrary he may be extremely aggres-

sive. Since well-fixed defense mechanisms are difficult to combat, the need for discovering and treating attitudes of inferiority in the earlier stages is evident. When, as occasionally happens, some catastrophe breaks down the complicated defenses of the later period, the result is disorganized behavior of a very serious sort, often in the form of severe anxiety.

Defense mechanisms are not deliberately acquired by the person who displays them. They are for the most part unconscious, in the descriptive sense of this term. The individual does not show overaggressive or withdrawing behavior because of a reasoned decision to satisfy his motives with these devices. Instead, he finds himself aroused to activity by a drive the nature of which he does not understand. In a process of trial and error he discovers some responses that reduce his tensions and afford relief. These mechanisms tend to be repeated and perpetuated. Defensive behaviors are acquired by blind trial and error learning and do not involve deliberation or consciousness.

Having considered the general characteristics of defense mechanisms, it is now possible to turn to an enumeration of the most frequently occurring habits of this class. These have been divided into a number of categories, following the usually employed terminology, but this classification is for purposes of description only. Many of the so-called types of mechanisms overlap, and behavior that one observer would call by one name might possibly be differently designated by another equally competent person. The types of defense are often combined, and many kinds are usually found in the behavior of the same individual, especially during the early stages of adjustment.

COMPENSATION

Varieties of Compensation. Compensation may be defined as the overemphasis of a trait, acting as a defense to reduce the tensions occasioned by a personal defect. Compensatory habits serve purposes of adjustment in two ways. First, they are rather close substitutes for real achievement, and hence reduce

the drives that have been most directly thwarted. Second, compensations serve to divert attention from the deficiency, thereby eliminating some of the expressed or implied criticism that is fear producing. This operates in the case of self-criticism as well as that of censure from others, for by being preoccupied with the success of a substitute accomplishment, the individual finds himself less concerned with his inferiorities.

The simplest and probably also the most common compensations are those in which an individual overreacts in the same general function in which he possesses personal defects. A boy who is adjusting to physical inferiority is somewhat more likely to exhibit defenses of a physical nature than to seek compensations in other fields. Such defenses are selected because they are more directly satisfying. James G. very clearly illustrates this tendency. A frail boy in physical constitution, his serious accidents while at play strongly aroused an attitude of physical inferiority. His compensations of teasing and bullying are very direct defenses in that they assert his physical adequacy. To reassure himself in this way is more satisfying than to attain less direct compensations such as mental or scholastic ones.

Direct compensations against attitudes of mental and educational inferiority are often found. Sidney H. is an example of a boy employing this mode of defense. Sidney was a sixteen-year-old who was repeating the seventh grade for the third time. He was of very limited mentality, his intelligence quotient being about 75, yet a visitor stepping into the classroom would not guess this by his behavior. When the teacher was talking he leaned forward on his desk, his eyes alertly on the blackboard example. His whole manner fairly popped with attention and interest. When a question was asked he was the first to raise his hand, even though his answers were in almost every instance sadly deficient. Outside of the classroom he was always busy. He rushed from one activity to another with the air of one who has many important duties to perform. Sidney has developed very effective mental and scholastic compensations for his mental and scholastic weaknesses. His appearance of alertness not only fooled the casual observer, but also performed the com-

pensatory function of aiding Sidney in his own self-deception concerning his intellectual powers.

When the felt inferiority is social in nature, direct compensations are likely to take the form of devices for gaining attention. One high-school girl, Alva B., was notably unattractive, because of overweight and large coarse features. Her family's social position in the small town in which she lived was not a good one, and this, combined with her lack of pulcritude, debarred her from desired social relationships. As a compensation, Alva took to an excessive use of make-up. She appeared at school with her cheeks a deep red, her lips drawn in the most exaggerated manner, and with eyebrows plucked and penciled. This painting did not render her beautiful, but it made her noticed, which was an effective substitute for social recognition. Later Alva became a cheer leader and was an excellent one, this position being perfectly suited to her need for attention.

Transferred compensations, in which the overemphasis is of a function other than that in which weakness is felt, are also fairly common. The mental-physical relationship offers the best examples of this secondary defense. The dull, overage, child in school, being thwarted in the attainment of recognition and mastery in school performances, often compensates by physical bullying and showing-off. Since he is older and therefore larger than most of his classmates, the trial and error process initiated by the blocking of drives finds easy outlets in physical mastery. If the compensation can be directed into socially approved channels, such as athletics, the reaction is not undesirable, but unfortunate defenses in the form of bullying are not uncommon. The opposite type of transferred compensation is shown by the individual who substitutes mental superiority for physical achievement that is thwarted by an attitude of inferiority. If the person who makes such a compensation is of sufficient mental ability, scholarly accomplishment and valuable contributions may result. In the case of persons not so ably endowed, the grind and pseudo-scholar may result, or defense may be turned to still other devices because of the failure of the intellectual outlet.

Peculiar Abilities. A variety of compensation frequently found in the later and more fixed stages of defense is that of developing a high degree of skill in some obscure line in which competition will be at a minimum. The number of traits that may serve as compensations of the peculiar abilities type is endless. Cases have been cited in which skill at some relatively uncommon game such as ping-pong has been developed to such a high degree that the individual in question is able to defeat all comers. When this skill acts as a compensation, the person refuses to compete in commoner sports such as tennis, but will exhibit his performance only in the branch in which he clearly excels. In all compensations of this type the peculiar ability is greatly overevaluated. The individual rationalizes to persuade himself and others of its importance and usually also takes a depreciatory attitude toward other accomplishments. Interests in hobbies and collections frequently serve as compensatory activities. The possession of stamps, coins, antiques, pictures and many other objects frequently collected gives tension reduction in the forms of substitute achievement and of social recognition. Not all collections serve as defense mechanisms, but when the field of endeavor is an uncommon one and when the achievement is excessively valued, the operation of compensation is probable.

More Remote Compensations. Not all compensatory reactions are as obvious as those described thus far. Among the more common indirect forms of defense is that of *parents' compensation through their children.* Parents who have acquired attitudes of inferiority frequently plan great achievements for their children in the field in which they have experienced thwarted ambitions. The case of Paul J. illustrates this tendency. Paul's father was a successful pharmacist who had worked his way to achievement without much formal education. His lifelong desire had been to be a physician, but he had been unable to realize this aim. From early childhood it had been decreed that Paul should enter the medical profession. After completing his college courses with considerable difficulty, Paul secured entrance to a medical school, but in the first semester

failed in anatomy and chemistry. Investigation showed that his scholastic aptitude was in the lowest five per cent of his class and that his interests, measured by a relatively objective technique, were not at all those of physicians. Both tests and interviews showed the young man's interests and abilities to be in the business field rather than in medicine. Since he had been released from the medical school by his failures this profession was closed to him, which was probably best for his ultimate welfare. This adjustment was achieved, however, at the expense of years of lost effort that resulted in creating in Paul a sense of personal inadequacy that will be difficult to overcome in any field of endeavor. Many failing students in all colleges have been driven to seek a higher education for which they are unadapted because their parents seek compensation in the attainment of superior educational and economic status by their children. Parental overcompensation in another field is described in a case cited by Bagby (1928). A mother, disappointed in her own marriage, had imagined a brilliant match for her daughter. Driven by this compensatory attitude the mother pushed and instructed the girl to such an extent that she became self-conscious and tongue-tied before boys. The result was that the daughter acquired a serious inferiority attitude to which she had to adjust by various defenses of her own. In some cases, of course, the drive of parental compensation may be a valuable one in spurring the child to achievement, provided that the youngster's ability and interests are compatible with the parent's ambitions.

Another obscure form of defense is *compensation against evil in an abstract form.* An individual who is tempted by alcohol, gambling, sex or by something else that his training has taught him to conceive as evil, may react to his temptation as to a weakness or inferiority and go to great lengths to compensate by combating the evil in question. Morgan (1924) describes a young clergyman whose sermons developed into frenzied tirades against sin, which to him was apparently synonymous with sexual conduct. He alienated his congregation by denunciations of dancing, bobbed hair, rouge and vice, which he

considered all in the same category. This young minister was trying to lead a celibate life which he believed to be essential to his calling. Assailed by normal sexual thoughts, he regarded them as evidence of his weakness of will and therefore as a sign of personal inferiority. Compensation was secured by outbursts against sex in general, in which he also secured reinforcement of his inhibitions. Many prudish attitudes arise in a similar manner. The militant reformer is also frequently moved by the compensation mechanism. Many commentators have noted that the most fervent reformer is one who has been tempted strongly by the evil that he seeks to combat.

Identification. The defense mechanism known as identification is related both to compensation and to phantasy. Identification is a method of tension reduction through the achievements of other persons or groups or in some cases through the merit of inanimate objects. The individual employing this mechanism is said to "identify himself" with the person, organization, activity or thing concerned. Identification arises in early life through the relationship of parent and child. Since the young child is assisted in many of his activities and achievements by the efforts of his parents, he establishes the habit of regarding their qualities as assets of his own. This tendency is reinforced by later experiences of group participation, the achievements of the group having motive-satisfying value for each of its members. The boy's first identification is usually with his father, who satisfies many of his needs for strength and knowledge. Many traits, ranging in importance from mannerisms to moral and social attitudes, are learned by children through the imitation of parental qualities because of the operation of the identification mechanism. In this sense, identification is one of the basic factors in character formation.

In later life, identification frequently acts as a defense against attitudes of inferiority. Men join clubs, fraternities and lodges by means of which individual aspirations are gained through collective effort. Such societies are often valued in proportion to their exclusiveness, this being satisfying to the motives of self-esteem. The youth identifies himself with his school, the

business man with his organization, the housewife with her home and family. The extent to which people tend to speak of "*my* group" and to refer to it as "*we*," indicates the individual and self-centered nature of the satisfactions of group participation. Identification with social movements, such as with capitalism, with socialism or with various reforms, also provides individual compensation. Individuals may also identify themselves with their possessions. Men pride themselves in the excellence of their homes, their automobiles or their clothing, and gain prestige values from exhibiting and bragging about these material objects.

Like all defense mechanisms, identification is not deliberately acquired, nor is the individual usually aware of its nature or adjustive significance. It is a very deeply ingrained habit arising through the trial and error processes of adjustive learning. Identification is a normal form of adjustment, present in all persons, but is likely to be of exaggerated value to those who have excessive attitudes of inferiority.

The Value of Compensation. Not all compensations constitute maladjustments or necessitate psychological treatment. If compensatory activities do not hamper an individual's means of livelihood, if they do not cause him to be strikingly ineffective in social relationships and if they do not interfere with the lives of other persons, then the removal of the defenses is in most cases unnecessary. Compensations that are not of a socially undesirable character are recognized by psychologists as the most healthful form of adjustment to the inferiority attitude. More serious conduct disorders often arise when individuals are unable to discover methods of compensating for their defects. In many instances the treatment of behavior problems arising from the attitude of inferiority is carried out by deliberately directing the thwarted motives into some form of compensatory outlet. The "peculiar abilities" adjustment is especially helpful in reducing tensions caused by reaction to a relatively irremediable defect.

Although most defensive reactions hinder social adjustment, there are instances in which they result in superior forms of

accomplishment. The greatest orator of ancient Greece, Demosthenes, is said to have been a stutterer in his youth. So intense was his drive of compensation that he not only overcame the speech defect but became renowned for his ability in this field. It has been suggested, though without really sufficient evidence, that the deafness of Edison provided the incentive that directed his inventive genius to the discovery of the phonograph and the microphone, and that Theodore Roosevelt's advocacy of "the strenuous life" sprang from his physical weakness in boyhood. There is considerable probability that the efforts of some research scientists are defensive forms of behavior, manifested both by their seclusiveness in retiring to the solitary work of their laboratories and by their zeal in discovering new knowledge. In spite of the attractive plausibility of these instances, however, they account for only a minority of cases. The greater part of eminent achievement is probably motivated by drives of normal and ordinary origin acting in conjunction with exceptionally high ability. The large number of *unsuccessful* aspirants to fame, who continue their efforts in spite of rational evidence of their lack of aptitude, better illustrates the drive of compensatory behavior.

EGOCENTRISM

Sources of Egocentrism. Defensive behavior is a notable characteristic of children and adults who have developed habits of receiving constant attention and praise, which is the attitude of egocentrism. Egocentric habits usually originate in early childhood because of overindulgence by parents. The child becomes accustomed to receiving attention whenever he demands it and to being praised and displayed in the presence of visitors. When such treatment has become habitual the child, overstimulated by past excessive satisfactions, demands that they continue and uses many defensive devices to keep himself the center of attraction. Another source of egocentrism lies in the high value placed on competitive accomplishment. If parents, teachers and others constantly demand that the child

be a leader in school achievement or in other group activities, he will find means of being outstanding by developing egocentric traits. Pressure to excel when exerted on a child of mediocre caliber may cause attitudes of inferiority. When a boy or girl of good ability is so stimulated as to place an excessive emphasis on excelling others, an overaggressive, pompous and self-proud character may be created. Much of the behavior of the egocentric child resembles the compensatory reactions of one who feels inferior, but the fundamental timidity is lacking.

The child in whom egocentric traits have been developed will encounter difficulties when he enters a social group. The other children of the playground or schoolroom will not have the consideration for him that he has come to expect from his parents. He finds himself no longer the center of the universe but merely one of a number of equal individuals. The child may respond to this situation by a number of defenses of which two types are the most common. He may develop a belief that he is being discriminated against, and thus blame his lack of attention on the faults of others. This type of reaction, a form of "projection," is the beginning of feelings of persecution which sometimes become serious when present in extreme degree. The overindulged individual feels that any person who does not treat him with parent-like consideration is plotting against him.

Attention-Getting Mechanisms. A second type of defense against thwarted egocentrism is the development of attention-getting mechanisms. This is a psychological concept of wide application and great importance. Attention-getting devices are sometimes learned in very early infancy. If a baby is often picked up and petted when it cries, the crying will be repeated frequently, since it has been rewarded by the administration of pleasurable stimulation. At a little later stage almost all children resort to many obvious attention-getting devices such as getting in the way, asking questions and making facial grimaces. Many other troublesome forms of behavior arise from this mechanism. Refusal to eat is a common way of attracting attention that the child hits upon when he discovers that he can make

meal-time a lengthy ritual of which he is the center while the parents coax and plead for every mouthful that he eats. Deliberate disobedience is often an attention-getting mechanism since punishment, especially in the form of scolding, is more satisfying than to be ignored. The inventory of behaviors that may have attention-getting value to some children is almost inexhaustible, including bed-wetting, thumb-sucking, running away, complaining of injuries and ailments, and many others. Most normal children try attention-getting behaviors of one kind or another. These may often easily be cured by ignoring them, for when the youngster sees that his antics or refusals no longer arouse parental concern, he will drop them. Where this simple treatment, carried out over a sufficient period, is ineffective, the presence of a general adjustment problem is indicated, such as an attitude of insecurity, long-trained egocentrism or the frustration of some important motives. Such cases, of course, need careful psychological diagnosis and remedial measures.

When egocentrism is carried into the school period the resultant attention-getting mechanisms are often extremely annoying to the teacher and the class. The child so affected asks too many questions, interrupts other children and seeks in every way to be unusual. Repeated petty infractions of discipline and refusals to conform to routine serve the same purposes. Teachers find it difficult to maintain an impartial and objective attitude toward the egocentric child because of the persistence of his behavior and because it seems to be a personal affront. Just this calm and psychological treatment is needed, however, in order to avoid creating a feeling of persecution and to teach the fundamentals of social co-operation that the child needs to learn. Although the proportion of individuals exhibiting attention-getting behavior undoubtedly decreases with age, some adolescents and adults cling to it, either in the more infantile forms or, sometimes, as pathological lying, self-accusation or delinquency. The concept of attention-getting mechanisms in relation to the egocentric personality assists in understanding even these complex phenomena.

SOME PROBLEMS OF CONDUCT

Lying and Stealing. Of the forms of conduct socially regarded as delinquencies, lying and stealing are the most common among children. These traits arise from a great variety of causes. Almost all children lie to escape punishment, to cover attitudes of inferiority or guilt and to enhance their prestige. The latter type of lying merges with the phantasy life common in early childhood and is better considered as fictional invention and idea manipulation rather than as prevarication in the moral sense of the term. Delinquencies of the type of stealing are exceedingly complicated in origin. In any one case no single factor, but a wealth of contributing causes, underlies the conduct. Some of the correlates of delinquency that have been investigated with a fair degree of thoroughness are the effect of parents' personalities, that of associates and gangs, the effect of many environmental factors including "delinquency areas" in large cities, and the influence of intelligence. An adequate presentation of these facts would require a volume in itself and cannot be included here.

From the point of view of the psychology of adjustment, Sherman (1934) has distinguished three principal types of motivation basic to lying and stealing. These are: (1) Lying and stealing to be on a par with playmates and to have what they have. (2) Lying and stealing to gain attention. (3) Lying and stealing as emotional outlets for conflicts, often sexual, and for other adjustment difficulties. Of these, the first and second classes and some cases from the third class may be considered as defensive adjustments.

Delinquencies as Defenses. Since compensation often takes the form of the overassertion of a false or antisocial form of superiority, it is not strange that many so-called delinquencies arise through this mechanism. Groves and Blanchard (1930) describe the case of a ten-year-old boy who developed an attitude of inferiority because of a glandular disorder that made him too fat to compete with other children in games and caused him to be ridiculed. The boy started by inventing stories con-

cerning himself as a burglar and robber, thereby using pathological lying as a defense, but these were received with disbelief. He then began actual stealing first from his parents, later from his teachers and from others. He exhibited his spoils to the other boys and thus gained their respect as a daring malefactor. He was discovered and brought before the juvenile court, but this only added to his prestige and therefore did not cure the stealing. The case was finally remedied by combined medical, athletic and psychological treatments that removed the need for his compensatory adjustment.

Another instance is of a fourteen-year-old boy who had developed a reputation for toughness and a tendency to consort with a rowdy gang with whom he participated in some street brawls and several small burglaries. This youth was found to be compensating for a fear that he would become a "sissy." His widowed mother had tried to keep him under close supervision, with the result that he was ridiculed as a mama's boy. He reacted to the opposite extreme in the form of an aggressive attitude that led to delinquency.

It is probable that all delinquency and even all adult crime has its origins in difficulties of adjustment and errors of habit formation. Popular opinion, however, is slow in accepting an objective attitude toward these problems, clinging to a belief in the individual's free choice of right or wrong conduct. White (1917) has ingeniously suggested psychological factors underlying this attitude toward crime. The criminal, he says, is the scapegoat of public conscience. As a defense against acknowledging responsibility for the existence of crime and wrong, people vent their wrath upon the criminal, thereby bolstering up their own self-righteousness. According to this view, the painful punishment meted out to the delinquent acts as a compensatory mechanism for the public at large! It is certainly true that in countless cases of juvenile delinquency, the parents of the delinquent insist on his worthlessness and wish him sent to a reformatory, in this way excusing their fault for not having provided proper training by placing the blame on the youth. The wide establishment of juvenile courts, usually with the

services of a psychiatrist or psychologist, gives promise that in time delinquency will receive the same objective consideration as is accorded to other conduct problems.

RATIONALIZATION

Varieties of Rationalization. Rationalization is a form of defense in which the individual gives socially acceptable reasons for his behavior, either verbally, by thought or by conduct. Rationalization operates in making excuses for behavior, in making it seem to conform to social usages, and also in explaining away inferiorities. The term is a very misleading one, "irrationalization" would be better. Rationalization is not a process of logical thought, it is an attempt to make conduct *appear* sensible and in conformity with custom and social expectation. The person who rationalizes gives "good" reasons for his behavior, to protect himself from the necessity of acknowledging the *real* reasons which he regards as inferior or blameworthy.

A man buying a new automobile persuades himself that he needs it by a host of good reasons. He points out that rides in the country will benefit his wife's health; that he can take the children to school in the car and thereby keep them from getting wet feet in rainy weather; that the recreation which the car will afford will keep him more fit for his business. Indeed, he convinces himself that if he does not have the car he is likely to suffer a breakdown and lose his job entirely. So the man argues that the automobile, far from being an extravagance, will be a great economy in the end. Behind these good reasons for buying the car may lie a host of unacknowledged real reasons. That the car is a badge of success in the community necessary to full social approval, that mastery is involved in the form of lording it over his neighbors, may be the strong motives underlying the purchase.

Back of every rationalization are the strong motives such as mastery, social approval, and sex which are not ordinarily owned or recognized. Through social conventions these im-

portant drives have come to be regarded as inferior or blameworthy. Not only are they not acknowledged in polite society, but the individual becomes so conditioned that he will frequently not admit them to himself.

Rationalization is a very common type of human behavior, and not all examples of it are to be interpreted as defenses against inferiority. Some forms of rationalization, however, are of strikingly defensive nature. *Blaming the incidental cause* is a typical defense mechanism. The child who stumbles over a stool, turns and kicks it. Here is rationalization in action. The stool is blamed for the accident, thereby defending the child against the imputation of inferiority in the form of carelessness or clumsiness. The defeated tennis player says that he must have his racket restrung, and the poor workman proverbially blames his tools. Fatalistic attitudes which blame failure on the deity or on society in general — "It is the Lord's will," or, "I never had a chance" — are rationalizations of this type.

The *sourgrapes* mechanism is a common form of rationalization. The fox, unable to reach the grapes, declares that they are undesirable. Similarly we find a person proclaiming that the job he lost was no good anyway. The young man finds that the girl who refused him has a million faults. A highly organized rationalization of the sour grapes type is that known as the Doctrine of Balances, that if a person is superior in some respect, he must be inferior in some other respect. Many people believe that the mentally gifted child is inevitably high-strung and nervous, subject to very probable breakdowns. The belief is prevalent that the quick learner will not remember as much as will the slow learner — "easy come, easy go." "Beautiful but dumb," illustrates another common rationalization, that comely girls are especially likely to be stupid. In all three of these illustrations, the facts of psychological research contradict the popular beliefs. Gifted children are less likely to be nervous than are average children; quick learners retain better than slow learners; beautiful girls are slightly more likely to be bright than to be stupid. These doctrines of balances are the

rationalizations of inferior persons. That it is undesirable for a child to be very bright is very consoling to the parents of stupid children. The rationalization concerning pulcritude and brains is the invention of the unattractive.

The converse of the sour grapes rationalization, which Gates (1930) has aptly termed the *sweet lemon* mechanism, is frequently encountered. It is an assertion that one's fate or fortunes, however humble, are just what one wants, or just what is best for one in the end.

Projection. A form of defense somewhat allied to rationalization is that called projection, in which persons perceive in others the traits or motives in which they feel their own inferiority. Thus a student who feels weak and tempted in relation to cheating on examinations or who is reacting with intense guilt to having cheated in the past, may compensate by a scrupulous personal honesty. Being particularly sensitive to this evil, as he conceives it, he *projects* it upon his fellow students by accepting evidence of very low objective value as indicating that everyone around him is cheating. Any glance, word or gesture on the part of his neighbors is interpreted as dishonesty on the examination. Healy (and others, 1929) found this mechanism very troublesome in relation to the placement of problem children in foster homes. In many cases, the foster parent's own shortcomings were projected on the child, resulting in unfavorable reports and a lack of co-operation. One instance concerned a foster mother who discovered her charge indulging in auto-sexual practices. Instead of treating the problem constructively, she came to loathe the boy and called him a "degenerate." Investigation disclosed that this foster mother had never achieved sexual adjustment herself and regarded all sexual matters with abhorrence. She projected her own lack of adjustment into the boy's difficulty. The only remedy for the situation was to transfer the child to another home.[1]

[1] It should be noted that, while *projection* has here been defined in the most accepted sense, other writers apply the term to different mechanisms. Several use "projection" to describe the rationalization of "blaming the incidental cause" or "passing the buck," which is obviously related to, but significantly different from, the present usage. Others incorrectly have spoken of "projection" as synonymous with "identification."

More Serious Aspects of Rationalization. Certain aspects of some very serious maladjustments are essentially of the rationalization type. *Blaming failure on the conspiracy of others* is a defense mechanism designed to reduce tensions engendered by attitudes of inferiority. One instance is of a college student who in four years of study had completed the courses which were the minimum requirements for a degree, but with such low grades that he did not have a scholastic average equal to that required for graduation by the rules of the university. He became convinced that the professor at the head of the department in which he had studied was prejudiced against him. Here was an explanation of his failure which avoided the admission of inferiority. The student appealed to the dean and to the president of the university in turn, and having no success in convincing them that he was being unfairly treated, came to believe that they too had entered a conspiracy to prevent him from getting his degree. He then wrote letters to the trustees of the university and to the newspapers, protesting against his treatment. By the belief that others were to blame, he spared himself the recognition of his own failure.

Rationalization patterns, such as that of the college student, shade by imperceptible degrees into *delusions*. A delusion is a belief so obviously false that its abnormality is apparent to the casual observer, and so persistently held that no logical arguments can break it down. In the case of another college student, the false beliefs amounted to delusions. Gregory E., as a preparatory-school student, had distinguished himself by excellence as a track athlete. He entered college with the expectation of a brilliant career as a runner, which was fulfilled by his performance in the freshman year. In the next two years, however, he seemed to run into a streak of bad luck. Frequent small injuries and ailments kept him out of races, or from doing his best. In the senior year, still not having earned his varsity letter, he began to blame various circumstances for his lack of success. Finally Gregory's ideas of persecution centered on the fraternities, of which he had not become a member. He came to believe that the fraternity men were

conspiring to keep him off of the track team; that they were prejudicing his friends against him; and finally, that they were poisoning his food and causing the restaurants at which he ate to poison him also. This and other delusions became so marked and were so apparent in his conduct as well as in his thinking, that he was admitted to a hospital for the mentally disordered.

The reader may well ask, "Isn't there something else wrong with a person who develops such delusions, in addition to mere rationalization?" The answer, of course, is in the affirmative. In such persons as Gregory there exists a general weakness of mental integration, a general lack of discriminative ability, which makes possible the development of the delusional beliefs. This case illustration is not an attempt to explain the delusional mechanism completely, but is only to show that delusions are essentially an extreme form of rationalization that may be found in the generally mentally disordered.

SUGGESTED READINGS

Valuable supplementary readings on defense mechanisms, compensation and rationalization may be found in Sherman, *Mental Hygiene and Education*, chaps. 4, 8 and 13; Morgan, *The Psychology of the Unadjusted School Child*, chaps. 11 and 12; Bagby, *The Psychology of Personality*, chaps. 7, 8, 9, and 12. A large number of adjustment mechanisms are enumerated by Symonds, *Mental Hygiene of the School Child*, chap. 5.

The psychological aspects of delinquency are described in Burt, *The Young Delinquent*; Healy, *Mental Conflicts and Misconduct*; Healy and Bronner, *Delinquents and Criminals*; and Thomas, *The Unadjusted Girl*.

The concepts of compensation and rationalization are applied to the origin of severe mental disorders by Fisher, *Introduction to Abnormal Psychology*, chaps. 6 and 13; and by Morgan, *The Psychology of Abnormal People*, chap. 15.

CHAPTER VII

ADJUSTMENT BY WITHDRAWING

WITHDRAWING AS A DEFENSE

Seclusiveness and Timidity. Another way in which many individuals respond to thwarting is by retreating from the situations in which they experience adjustive difficulty. Withdrawing is a normal form of adjustment in a statistical sense, for practically all persons make use of it to some extent. Seclusiveness, like all other forms of defense, is a maladjustment only in proportion to the degree of its employment, being normal when it does not seriously interfere with an individual's social effectiveness, pathological when he withdraws to such an extent as to affect his perception of reality. The seclusive type of adjustment originates from the same psychological pattern as do the other types. Confronted with the frustration of some strong motive, the individual makes varying responses until some form of behavior is discovered that will reduce his emotional tensions. In many instances the satisfying action is found in seclusiveness and timidity which are avoidant responses to the stimuli responsible for the maladjustment. The seclusive behavior is adjustive, for by avoiding the attempt to cope with his environment, the individual eliminates the possibility of failure. The logic of seclusiveness is that, by not trying, failure is avoided. In the early or "varied response" stage of adjustment to thwarting, it is typical for the reaction of timidity to alternate with the more aggressive types of defense. For an individual to be shy and seclusive at one moment, and to be bold and overbearing in the next, often seems inconsistent, but it has psychological coherence since both forms of response indicate attitudes of inferiority and fears of social criticism.

Since shy and withdrawing persons are not as much of a nuisance to those around them as are the more aggressive individuals, their maladjustments often escape notice. This is espe-

cially likely to be true of school children, for teachers quickly discover the annoyingly active child who compensates, rationalizes or lies, while the withdrawing youngster is often considered as a model of perfect deportment. For the same reasons, the seriousness and extent of withdrawing forms of adjustment is usually underestimated by teachers and parents. In an interesting study of attitudes toward conduct symptoms, Wickman (1928) had a group of 511 elementary school teachers rank a list of fifty school behavior problems in order of their seriousness. Thirty clinical psychologists also rated these conduct disorders as to seriousness from the point of view of mental hygiene. As Table 1 clearly shows, the teachers considered sex problems and aggressive actions directed against persons and property as most undesirable, while they rated a number of signs of seclusiveness and withdrawal as relatively inconsequential. In rather startling contrast, the psychologists deemed the symptoms of unsocial behavior as the most unfortunate, believing that these were more indicative of personal maladjustment. Psychologists in general are agreed that the withdrawing modes of defense are more insidious than the aggressive types because they are likely to escape detection, because they are more difficult to overcome in treatment and because they more frequently lead to serious phases of mental disorder.

The symptoms of the withdrawing mechanisms are more subtle than are those of other types, but can be distinguished by parents and educators who are sufficiently alert. The seclusive child shuns the company of other children, often remaining by himself during recess and play periods when most children are actively and socially engaged. He does not participate in games and sports, but prefers solitary amusements, such as reading, and plans games that can be performed by himself alone. He may tend to associate with younger and smaller children rather than those of his own age. In the classroom he is likely to take part in the academic work only when called upon directly, seldom volunteering information or services. The timid child sits on the side lines, he would rather watch than do. When called upon or when compelled by circum-

TABLE 1. THE SERIOUSNESS OF CHILDREN'S BEHAVIOR PROBLEMS, AS RATED BY 511 TEACHERS AND BY 30 CLINICAL PSYCHOLOGISTS
(From Wickman, *Children's Behavior and Teachers' Attitudes*, Commonwealth Fund, 1928.)

Teachers	Average Score		Clinicians	Average Score	
	Teachers	Clinicians		Clinicians	Teachers
Upper ten			*Upper ten*		
Heterosexual activity	17.3	9.9	Unsocialness	17.3	8.3
Stealing	17.0	12.5	Suspiciousness	16.4	9.1
Masturbation	16.7	6.4	Unhappy, depressed	16.2	11.5
Obscene notes, talk	16.6	8.8	Resentfulness	14.1	10.8
Untruthfulness	15.8	10.3	Fearfulness	14.0	9.7
Truancy	15.6	10.3	Cruelty, bullying	13.5	14.8
Impertinence, defiance	15.0	7.1	Easily discouraged	13.4	11.5
Cruelty, bullying	14.8	13.5	Suggestible	13.3	11.8
Cheating	14.7	10.3	Overcritical of others	13.2	7.9
Destroying school materials	14.3	5.1	Sensitiveness	13.1	7.0
Lower ten			*Lower ten*		
Dreaminess, unsociality	8.3	11.3	Masturbation	6.4	16.7
Imaginative lying	8.1	7.5	Disobedience	6.4	14.1
Interrupting	8.0	2.8	Tardiness	5.6	10.5
Inquisitiveness	8.0	5.3	Inquisitiveness	5.3	8.0
Overcritical of others	7.9	13.2	Destroying school materials	5.1	14.3
Tattling	7.5	8.8	Disorderliness in class	3.4	11.7
Whispering	7.5	0.8	Profanity	2.9	12.3
Sensitiveness	7.0	13.1	Interrupting	2.8	8.0
Restlessness	6.9	6.4	Smoking	2.3	12.0
Shyness	5.7	12.5	Whispering	0.8	7.5

stances to display himself before others he may blush or turn pale, these vasomotor phenomena being controlled by the autonomic nervous system and therefore evidences of emotional states. The seclusive person frequently appears to be "absent-minded," for he is not responding vigorously to external stimuli, these being either excluded by inhibitory processes or else overshadowed by revery and daydreaming, which usually accompany withdrawing. Slightly more serious is the symptom of loss of interest and ambition that is shown in a listless attitude toward work, school or play. It should be emphasized, for the sake of positive mental hygiene, that practically all persons

show some of these signs, at least temporarily at some time in their lives and to a moderate extent. A little seclusiveness is a symptom of a minor maladjustment that is likely to right itself without leaving permanently bad effects. A marked and continuous tendency toward withdrawing signifies a need for psychological study and treatment.

Origins of Withdrawing Reactions. Like all other defense mechanisms, withdrawing reactions are caused by a variety of factors that differ from person to person and are seldom uncomplicated even in the case of a single individual. Among the most frequent causes of seclusiveness are strong and continued fear-conditioning, the persistent frustration of other modes of defense, and habit formations that predispose an individual to withdraw rather than to employ other methods of adjustment. Fear-conditioning is at the same time the most obvious and the most serious cause of seclusiveness. Case studies of children who show withdrawing reactions of various kinds very frequently show abusive treatment on the part of parents, whose physical punishments, threats and loud scoldings result in the arousing of a persistent state of fear in the child. The child manifests a continuous emotional tension that causes him to react fearfully to stimuli that normal children would ignore. If the fear-conditioning is intense and prolonged, the response becomes generalized and the child reacts with fear and retreat to all competitive situations. Sometimes when children have been overprotected by their parents so that they do not develop habits of independence, a fearful and seclusive attitude will develop on entering school. Not having learned how to take part in group activities the child shrinks from participation and feels fear because of his inability to adjust. Since he is accustomed to attention and praise, the relatively impersonal and objective treatment that he now receives from the other children and his teacher causes him to feel unwanted and unsuccessful, hence he retreats from competition or seeks satisfactions in phantasy.

A severe disciplinary treatment of compensatory or egocentric behavior in children and adolescents frequently results

in withdrawing. If an individual who has a need for some kind of defensive outlet is merely frustrated in the attainment of his compensations, he will turn to seclusiveness as a defense since this reaction is quiet and orderly and will not bring down disciplinary wrath upon him. Many parents consider aggressive behavior only as an outbreak against authority that must be put down. If compensations are persistently eliminated by punishment, the youngster has no alternative except seclusiveness and daydreaming. Many cowed, inert, ineffective adolescents suffer from the suppression of their more active attempts toward adjustment. The danger of a repressive type of discipline is that it drives the child to adopt withdrawing defenses. A constructive treatment of behavior problems is one that substitutes more desirable forms of adjustment instead of merely eliminating the undesirable forms.

The tendency to use withdrawing defense mechanisms may also be established by habit formation, influenced by a long course of relatively mild experiences throughout the life of the individual. A child who is reared without adequate contacts with other children or who associates chiefly with adults will be predisposed toward a self-sufficiency in adjustment that, in a later crisis, will lead to a seclusive type of defense. If the parents' interests are individual rather than social and if they find recreation in reading and in quiet games rather than parties and athletics, the child is likely to follow their example. Physical weakness or lack of skill may contribute to the formation of a seclusive personality, if it causes repeated failures and rebuffs when the child tries to participate in active play with his fellows. There is some indication that children of good mental ability develop more interest in individual play and hobbies than in active and competitive games. This tendency is not a maladjustment in itself but may lead to the selection of withdrawing rather than compensatory behavior if motives are seriously thwarted at a later time. Illness in childhood or adolescence that necessitates spending considerable time in bed or alone probably leads to the formation of seclusive personality traits, especially daydreaming. In general, all of those factors that

contribute to the formation of habits of personality may cause an individual to adopt the seclusive attitude. Physique, health, mentality, skill, parental example and circumstances of life all may operate to mould personality into this pattern.

Pseudo-feeble-mindedness. Cases of seclusive behavior are sometimes discovered in which the individual withdraws to such a marked degree that he no longer makes any active attempts to secure adjustment. Such an occurrence in a school child is often mistaken for feeble-mindedness. The genuinely feeble-minded individual is characterized by a striking inability to learn and to adapt to the requirements of the classroom. An extremely withdrawn child may superficially resemble the dull one in his lack of achievement, but he suffers from a fear of trying rather than from a lack of ability. Burnham (1924) employed the term *pseudo-feeble-mindedness* to describe cases of this type, in which emotional conditioning or unfortunate habit formation has led to a condition that may be mistaken for stupidity. An excellent illustration of how withdrawing and feeble-mindedness may be confused by uninformed parents and teachers is given by Morgan.[1]

> A boy of six and a half years of age was brought to our clinic by his mother, grandmother, and the school nurse with the complaint that he was feeble-minded. They requested an examination so that they could be sure of this assumption and thus be guided in their treatment of him. An examination of the boy's intelligence revealed the fact that he was normal in this respect.
>
> Why did they think he was feeble-minded? They reported that he sat listlessly in the class room, paying no attention to what the teacher said, or what the other children did. On the playground he was just as indifferent. He could be found off in a corner all alone, not even watching what the rest were doing. If the teacher or anyone else spoke to him he would answer mechanically. He seemed drawn up into his shell and no one had been able to probe beneath his defensive indifference.
>
> When we talked to the boy these facts were verified. If we asked some question that could be answered mechanically he would

[1] Morgan, J. J. B., *The Psychology of Abnormal People*, pp. 530–532. Longmans, Green & Co., 1928.

respond. Since most of the test situations were of this sort he made a normal record. We discovered, in spite of his apparent co-operativeness, that, when a question had even a remote personal bearing, he would not respond. He would either fail to answer at all, try to divert our attention, or simply remain in total indifference....

It was discovered that his mother had unwittingly started this tendency. Before he began to attend school, she informed us, he had been much more alive and playful. After much coaxing she confessed what happened two months after he began his school career. A neighbor boy informed her that her son had done something on the playground that was quite a shock to her sensibilities. When he came home she quizzed him about it, but he at first denied any knowledge of the affair. She coaxed him and teased him to confess to her and, after two hours of continual persuasion, he did acknowledge his guilt. Whereupon, she informed us, with a gleam in her eye and her fists clenched, she gave him the "whipping of his life." She wound up her tale with the remark, "And he has not done it since."

She had successfully conditioned him against the repetition of an act which was pernicious to her, but in doing so she had made him distrustful and started him on on the path toward introversion and withdrawal from others.

We worked with the boy for six weeks, trying to break down this attitude and replace it with one of trust. We made known to him that we knew what he had done. We made him feel that we did not care, that we were his friends and would not punish him for anything he did or said, all in an endeavor to win back his confidence. It was a long, hard struggle but eventually we won. He grew less and less suspicious when he found we had no underlying motive in trying to get him to talk. When at last he was convinced, he changed his attitude entirely. He brightened up in school, he made his grades easily and again joined his comrades in play. The mother was delighted with the result and succeeded in winning back the child into her confidence.

Instances in which children are assumed to be feeble-minded by teachers and other relatively untrained observers are not limited to the extremely withdrawn types of behavior. Many kinds of eccentric or uncontrollable conduct or of lack of school achievement are incorrectly assigned to mental deficiency. For example, Violet M., a seven-year-old negro girl, was referred to a psychologist with the conviction that she was feeble-minded.

Her teacher reported that the girl paid little attention to school work, was constantly getting into fights, calling obscene names and having intense rage tantrums. In the first grade she failed to learn to write in a normal manner, but developed mirror-writing, using her left hand and making her letters in reversed form from right to left. The psychologist's tests found that Violet was of normal mental ability, her intelligence quotient on a verbal test being 92 and on a non-verbal test, 98. Her school difficulties were largely due to an extreme degree of left-handedness that necessitated special methods of instruction in writing and reading. Violet's conduct problems, while by no means simple, were due in large part to her lack of home training, since she was being brought up under most squalid conditions by an elderly aunt who was away from home during most of the day. The problems presented were those of adjustment and habit training, not those of mental defect.

Although properly administered mental tests will distinguish most of the pseudo-feeble-minded from the truly mentally deficient, it is probable that even a small number who secure very low ratings on tests are extremely withdrawn rather than lacking in mental ability. Skilled examiners can detect many of these cases, for the responses of a child who will not try differ considerably from those of a child who tries but cannot succeed. It is very important to separate the pseudo-feeble-minded from the real feeble-minded, for the treatments indicated for the two conditions are entirely different in nature.

Acute Forms of Withdrawing. Very acute conditions of the withdrawing type are seen in the serious mental disorders that have historically been known as the *dementia praecox* group. About one fourth of all admissions to mental hospitals are diagnosed as belonging to this class. The onset of dementia praecox is typically early in life, the peak of occurrence being reached in the decade between twenty and thirty years of age. Although a considerable variety of symptoms are shown by the patients, the relatively constant and characteristic indications are a very striking loss of interest in external affairs, an emotional inertia and apathy, a lack of co-ordination between emo-

tional states and the stimuli that arouse them, and a tendency toward peculiar mannerisms which seem to arise from the patient's reveries and to have no connection with the outside world. It may be seen quite clearly that these conditions represent an extreme exaggeration of the withdrawing behavior displayed by many of the more mildly maladjusted.

Some of the typical signs of an incipient stage of dementia praecox can be seen in the case of Angela B. This sixteen-year-old Italian girl had aroused the concern of her parents and of a social worker who was interested in the family by her persistent refusal to leave her home. At the time the case was referred to a psychologist, Angela had not stepped outside of the house for five months. She steadfastly refused to do even the simplest errand and was immune to such inducements as the movies. At home she sat most of the time without apparent occupation and stubbornly refused to do her share in the housework. Once when she was given new and attractive shoes and a dress in an effort to persuade her to go out, she destroyed the gifts, cutting the shoes to pieces with a knife. The social worker knew that something was the matter and, suspecting feeble-mindedness(!) asked a psychologist to make a test. The psychologist interviewed Angela in her home. When he entered the room the girl retired behind a stove and refused to leave this position or to sit down. She was dressed in a very dirty cotton house dress, a dilapidated sweater, no stockings and very run-down shoes. She had better clothing, but refused to change or wash her present garb. At first she would not talk, but after she became more familiar with the psychologist's presence she spoke of commonplace matters freely, but refused to reply to any personal question. Queries were met sometimes with silence, sometimes with stereotyped answers of "I'm all right," or, "It's all right," which were often quite irrelevant to the question. She resisted any attempt to administer a mental test, frequently saying, "I can't be bothered with that." During the course of the interview, however, a number of mental test elements were propounded in disguised form. Angela's answers showed not less than normal intelligence and entirely dismissed the sugges-

tion of feeble-mindedness. Angela wore a silly smile through most of the meeting and seemed delighted to be the center of attention. Since the symptoms of seclusiveness, negativism, slovenliness, refusal to work and superficial cheerfulness suggested the beginning of a dementia praecox condition, the girl was referred to a psychiatrist for further examination. Psychiatric interviews and a forced change of environment seemed to stimulate her for a time and she brightened considerably. After a while, however, Angela returned to her withdrawing behavior which grew worse until she was placed in a mental hospital, where she remains unimproved.

Dementia praecox has conventionally been divided into four types. The *simple* form is said to be characterized only by extreme seclusiveness. The *hebephrenic* form is more sudden in its onset and the symptoms of emotional confusion and silly behavior are more marked. The *catatonic* type displays a notable stereotypy of behavior either in repeated mannerisms or in a rigidity of posture, the patient often remaining motionless for hours. The *paranoid* form shows some delusions of a compensatory nature, usually delusions of persecution, such as were briefly described in the preceding chapter. These so-called types are not to be thought of as representing separate disease entities, however, as they are based merely on the preponderance of symptoms, not on the differentiation of causes. Many cases cannot be classified as to type, others may be differently classed at various periods in the development of the disorder.

The causes of the extreme withdrawing reactions seen in dementia praecox are not well known. The best estimate is that many causal factors operate, some physiological, some psychological, and all very obscure indeed. As a psychiatrist has recently expressed, "The 'one cause' of dementia praecox has never been found and probably never will be found because there is in all likelihood no one cause. Just as death has a number of causes, so does dementia praecox, and eventually the group of conditions that are classed under dementia praecox will be broken up according to their causes." [2] A small minor-

[2] Moss, F. A., and Hunt, T., *Foundations of Abnormal Psychology*, p. 463. New York, Prentice-Hall, 1932.

ity of cases have been cured by various physiological treatments which indicate that in these instances the condition was due to glandular disturbances, focal bacterial infections, toxic products of the body, or inadequate nutrition of the brain cells. It is possible that all cases of dementia praecox have their foundation in physiological disturbances such as these, upon which the psychological symptoms are superimposed. It is equally possible that some cases are entirely psychological in origin, being an extreme form of retreat from difficulties of adjustment.

The person without medical training should assume a very cautious attitude toward the acute withdrawing adjustments. Most mildly seclusive maladjustments remain minor in degree, even without any attention or treatment, and the withdrawing individual has no particular need to fear that he will develop a serious form of mental disorder. In any case, however, seclusiveness is an undesirable form of response. When it is recognized in one's self or one's neighbor, the layman can do an excellent service by securing psychiatric or psychological advice for the withdrawing person. In even the minor cases much unnecessary misery can be avoided by this procedure. In serious conditions of the dementia praecox variety, a fair proportion of cures can be effected by psychiatrists if the individual is discovered in a very early stage of the disorder.

NEGATIVISM

Refusal as a Defense. Withdrawing is not always of a quiet and passive nature. As has already been intimated, some persons withdraw with vigor and almost with violence, this reaction being as aggressive a defense as is compensation or egocentricity. When withdrawing is actively shown as refusal, stubbornness, contradictory attitudes and rebellion against authority, it is designated *negativism.* This form of adjustment partakes both of aggressive and of seclusive nature and indicates the futility of trying to classify all defense mechanisms as belonging strictly to one or the other of these categories.

Negativism in varying degrees is frequently encountered in

school children. A rather striking instance is the case of Mariana F., an eleven-year-old colored girl who was in the fourth grade. Mariana had a history of trouble throughout her school career. The typical reports concerning her told of stubbornness, lack of inclination to obey and quarrelsomeness with the other children. The principal described her as nervous, uncontrollable, resentful of any criticism and easily upset. Her academic progress had also been poor, for she had succeeded in completing only three grades during her five years of school. The precipitating outbreak, which caused Mariana to be referred to a psychological clinic, had been one of violent negativism. For a period of about two weeks she refused to take off her coat in the classroom, refused to sit down, and would do nothing that she was told to do. The teacher used the disciplinary device of making her stand in the corner (an ingenious method, since she refused to sit!), and made some rather inadequate attempts to reason with her. This extremely negativistic phase passed before the clinic was well started in its investigation, and Mariana's behavior became fairly normal.

The clinical study disclosed several pertinent factors needing correction, especially noteworthy being a severe physical defect, relatively low intelligence and an unfortunate home condition. Mariana suffered from a very pronounced curvature of the spine, probably congenital in origin, that caused her to walk queerly. She was a very unattractive little negro girl, and the additional infirmity made her the butt of much comment and ridicule. The physical defect had been noted before and orthopedic treatment had been recommended, but Mariana's mother had neglected to carry out the instructions. Mentally, the child was very dull, an intelligence quotient of 74 indicating borderline ability. Since the death of the father two years before, Mariana's mother had been out of the home much of the time doing housework. She was an overemotional woman who had given no consistent thought to the training of her children, if, indeed, she was capable of it. Mariana was the eldest child, there being two younger girls, both of whom seemed normal in conduct and in school work. The mother complained that

Mariana was not a good helper at home. She would not do as she was told and did not accomplish tasks that she started. She did not help as well as her two younger sisters, with whom the mother compared Mariana very unfavorably. Doubtless she made this invidious comparison very clear to the child and had thoroughly convinced her of her own incompetence. Mariana's mother was a severe but inconsistent disciplinarian, and had no comprehension of the child's difficulties.

The basis of the conduct problems seemed to lie in Mariana's dullness, in her feelings in regard to her physical condition and in her mother's attitude toward her. She had been scolded and nagged into the outbreaks of negativism that were the only defenses her dullness could devise against her lack of success in school and with other children and her lack of security at home. The treatment recommended included immediate and thorough attention to her physical disabilities at a medical clinic, placement in a special class in school, and interviews with the mother in the attempt to establish more sympathetic home attitudes.

Origins of Negativism. It is quite evident that negativism is a nonadjustive emotional response of the rage type, closely related to temper tantrums. Its original stimulus seems to be an interference with the self-initiated activity of the child, which at first results in the violent emotional manifestations of rage. The motor aspects of the rage response become inhibited by training and by fear of punishment, but the emotional mood remains. Negativism is thus the last emotional resort in situations involving restraint, interference or injury, and may persist in later life as a response to inferiority and insecurity.

Negativistic attitudes are so common among young children that they may be considered normal in the statistical sense, even though they are undesirable. Levy and Tulchin (1923), in a study of negative behavior toward a mental test situation, found the peak of incidence at two and a half to three years of age when nearly thirty per cent of children refuse to co-operate. Resistance to the test procedure was shown in decreasing degree by children older than this level, almost disappearing by the age of five. It has been suggested that the negativism of children

at this age is due to an increasing range of independent activity that makes them prone to assert themselves, coupled with a lack of understanding and of language that leaves the child few degrees of compliance between a complete "yes" and an absolute "no." The persistence of negativism in some children is due to inadequate or unfortunate training. If resistance operates to secure the child what he desires, to get him out of unpleasant tasks or to make him the center of attention, it will be learned and employed repeatedly, as will any other form of adjustment that proves to be of value as a tension reducer.

In older children and adolescents negativism may be present in less violent forms, being shown as resistance to orders, tendencies to quarrelsomeness and in attenuated expressions of emotion such as frowning and pouting. Most negativism of this type is a carry-over of temper habits formed in earlier childhood. In other instances a sense of insecurity leads to the revival of negative attitudes as a compensatory measure which asserts the individual's firmness and independence. Resistant and stubborn behavior can rarely be cured by arguing against the person who displays it. When the fundamental causes of the maladjustment that has led to this type of defense are discovered and corrected, it is possible to bring the individual to a realization of the ineffectiveness of negativism, and to cultivate positive forms of adjustment.

PHANTASY

Daydreaming. Phantasy or daydreaming is the imaginary representation of satisfactions that are not attained in real experience. Since this is such an easy outlet, it is probable that all persons daydream to some extent, and only the excessive occurrence of this mechanism is to be considered undesirable. Seclusive individuals are deprived of many motive-satisfactions that normally come from social participation and therefore are likely to develop habits of phantasy as their chief method of tension reduction. Most persons do not talk extensively about their phantasies, for they are regarded as private in character and are

often conceived as an inferior or childish occupation. Because of this reticence, the frequency of phantasy and the part that it plays in normal children and adults is usually underestimated. In well-adjusted individuals and in the early trial and error stages of maladjustment, daydreaming alternates with other mechanisms, many and varied means being employed to achieve tension reduction. In the later or fixed stage of maladjustment, phantasy is selected by some as their principal means of satisfaction and may be used to the exclusion of more active adjustive efforts.

Phantasy is a normal phase of the imaginative play of childhood. In the earlier years, the child acts out his play and often verbalizes it aloud. Studies of children's talk have shown that a very large part of it consists in self-assertion and self-expression, in which the child manages and subdues his environment and his fellows. As he grows older, the child finds his open self-assertion inhibited by social conventions. This may result in the development of new forms of active interest or in the continuation of self-centered play in the suppressed form of phantasy. Usually both outlets are utilized, the extent to which phantasy is employed being inversely proportional to the opportunity and success of more active attempts.

Excessive phantasy in later life is caused by many of the same factors that underlie the seclusive form of defense. If an individual learns to avoid the more active forms of adjustment because of fear-conditioning or because of persistent frustration, daydreaming will be utilized. Phantasy plays a dual rôle as a satisfier of the basic motives, and as a compensation for real or imagined inferiorities. The habit of daydreaming is often formed during school years by the inappropriateness of the curriculum to the child's needs. Very bright children find close attention unnecessary, since they grasp the work quickly and without effort. Dull children are often repelled by instruction that they cannot understand, and therefore are likely to give up the hopeless task of trying to learn. In either case daydreaming may offer a pleasant escape from the dreary classroom. When adequate provisions for individual differences in learning

ability are made, this unfortunate result may be avoided. Another cause of phantasy occurs when an individual learns to expect successes and satisfactions undiluted by any failures. If children are taught that a proportion of frustrations is always to be expected in life, they will not need to resort to imaginary successes to make up for real or fancied inferiorities.

Phantasy in Maladjustment. The existence of daydreams does not in itself constitute a maladjustment, but is a symptom and a contributing factor found in many maladjusted persons. The most important reason for the selection of phantasy rather than other mechanisms is usually a lack of the opportunity to make the more active varieties of adjustment. The rôle of phantasy in a maladjustment is shown in this case of a college student, cited by Pressey.[3]

> Edith Perry was badly overweight, poorly dressed, and generally tousled looking. She had the messy, almost dirty appearance that many fat people develop if they do not spend a good deal of time taking care of themselves. From a physical point of view there was nothing wrong with Edith except her obesity, but this condition was unusually effective in causing other maladjustments; indeed, the girl's whole social and emotional life was badly warped in consequence.
>
> Edith's own complaints were chiefly that she had no friends, that she was not popular with boys, and that she had frequent sexual daydreams. Her social isolation had been increasing ever since she was about thirteen — at which time she first began to acquire her flabby fat. She said that she never looked well dressed, even though she bought the best of materials; that she was always in the way because she was so big; and that both girls and boys made fun of her. In this day of slim feminine shapes she felt particularly conspicuous and was sure that boys would never care about her. As she was a distinctly capable student, she had plenty of leisure, and this time she used chiefly in daydreaming about boys. By the time she came to the writer's attention she had substituted an imaginary masculine society for real society so thoroughly that she was fairly well satisfied with her existence. Still, she had moments of feeling that she was not "normal" and that she needed friends.
>
> It seemed clear that this girl's fatness was the underlying cause

[3] Pressey, Luella Cole, *Some College Students and Their Problems*, p. 28. Columbus, Ohio State University Press, 1929.

of her social and emotional maladjustments. Therefore a natural first step was to put her on a reducing diet. A second step consisted in having some clothes selected for her in which she looked very well, in spite of her size. Soon the effects of the diet began to show, and the comfort and style of her new clothes began to give her greater self-confidence.

She was told not to worry about her daydreams, even though they were sexual in character, on the assumption that they would largely disappear of their own accord as soon as her social isolation and other emotional difficulties could be remedied, and that anyhow anxiety about sex matters would not help but hinder the total process of social rehabilitation and the development of self-confidence. As soon as Edith was presentable in appearance, efforts were made to have her make friends. She joined one or two clubs, went to shows with some of the girls in her classes, and tried to make people like her. In the course of six months she had succeeded in building up a few friendships among girls. At about this time she went away into a new environment for a summer vacation for a few weeks. Here she was so encouraged by her improved appearance that she was willing to try to attract boys — and was in some measure successful. She went to several dances, to shows sometimes, and even on one or two mild "petting" parties. She was enormously "set up" by these experiences, and was willing to take more exercise and maintain better control over her diet than heretofore. As a result, she lost some forty pounds.

Edith's problems are not over by any means. It is quite unlikely that she will ever be thin, but she has learned to dress attractively and to take care of her body so that she is not offensive. She is still not as popular as she would like to be. She does not yet have a sufficient number of boy friends to keep her entirely happy and to prevent some daydreaming. Her phantasies have very considerably diminished both in frequency and satisfaction, however, and it is reasonable to suppose that they will be no more troublesome than are those of the average individual, if she can achieve a still better social adjustment. Thus far no one has fallen in love with Edith, and she will never be completely happy until someone does. In the meantime, however, she is proceeding with her college work, making new friends from time to time, going out with boys occasionally, watching her appearance with a critical eye, and getting along much better than she did.

In the case of this student, daydreaming was an important substitute outlet arising from the thwarting of strong motives.

The daydreaming itself was not "treated"; indeed, only evil could have resulted from an attempt to stop the girl from dreaming by scolding her or by trying to convince her of the wastefulness and ineffectiveness of her behavior. She had to have some form of motive-satisfaction and daydreaming happened to be the most available one. When her fundamental difficulties were remedied, the tendency to phantasy soon returned to a normal level.

Varieties of Phantasy. Since daydreams express the imaginative fulfillment of a drive they are always satisfying, and usually, although not universally, pleasant in the ordinary sense of the word. The commonest form of daydreaming is the "*conquering hero*" type in which the individual pictures himself doing the deeds or possessing the things that he most desires. Throughout life, the individual's phantasies have a constant quality in representing the attainment of love, security, social approval, mastery and other strong and persistent motives. The detailed content of daydreams varies considerably with age and individual experiences. Children daydream of having vast quantities of candy or of toys, and later of being brave knights who conquer terrible dragons. Adolescent phantasies concern the approval or conquest of the desired sex partner, and often portray the acclaim received from athletics or other activities highly esteemed by their social group. Adults as well as adolescents daydream of possessing great physical strength or bravery, of attractiveness, of success in work, of power and of great wealth and importance. Because of their direct and naïve quality, usually quite uncensored by considerations of practicality or of social expediency, daydreams offer considerable data on human drives and motives. If daydreams represent what people want most, the importance of the motives of mastery, social approval and sex receives strong verification. The irrational character of the daydreams, even of normal and fairly well-adjusted persons, is notable. It is not unusual for a perfectly normal man or woman to daydream of an heroic encounter with a burglar, or to plan imaginatively the expenditure of a million dollars. The phantasies of the normal are fully as

absurd as the delusions of grandeur met in some of the insane, with the tremendously important distinction, of course, that the normal person does not confuse phantasy with reality, and so confines his daydreams to his most private sphere.

Green (1922) has suggested four types of phantasy, all of which come under the more inclusive class of the "conquering hero" daydream. Green describes the *display* phantasy, in which the dreamer gains applause for some act of ability or daring. A second form is the *saving* daydream, the dreamer performing some brave act under impossible conditions by which he gains the affection or gratitude of the person rescued and the acclaim of witnesses. In the phantasy of *grandeur*, the individual pictures himself a great person, a king or a God. The daydream of *homage* represents the rendering of a difficult act or service for someone whose love or sympathy is sought. These four varieties of phantasies constitute a valuable description of very common daydream experiences, but the classification is by no means complete or the classes mutually exclusive. Another type that is fairly common is the *death or destruction* daydream. In this the death of someone who stands in the way of preferment is imagined. A child may phantasy the removal of a brother who is more of a parental favorite than he, an adult may imagine the death of someone who will leave him money or who will leave the way open for professional promotion. The death or destruction daydream is often disguised because of the dreamer's inhibition against the admission of such antisocial desires. It may take the form of imagining that the person to be disposed of has met with an accident. When both affection and resentment are directed against the same individual, anxiety may develop from the conflict of loving and destructive impulses.

The unpleasant daydream, in which the dreamer imagines himself thwarted, injured or dead is only an apparent exception to the principle of the satisfying nature of phantasy. This type, sometimes called the "*suffering hero*" or "*martyr*" daydream, is an expression of self pity. In the more naïve varieties of this phantasy employed in childhood, the dreamer who be-

lieves himself ill treated may imagine that he runs away from home, becomes lost in a storm and is killed by wolves. His body is brought back amid the universal mourning of his family and friends. His parents are repentant, his neighbors tell of his many good qualities and a certain little girl is especially sorrowful. Adults not infrequently invent more sophisticated variations of this phantasy, in which self-injury brings sympathy. This form of daydream may be unpleasant, but it is none the less satisfying to the individual's motives. The imagined pity and sympathy are surrogates for acclaim and approval and are thus satisfying to several of the most fundamental drives.

Another distinction among classes of daydreams has been suggested by Sherman (1934), who divides them into the two types of *casual* and *systematic* phantasies. The casual daydreams vary from time to time, being suggested by immediate experiences and modified by changing transient interests. This is the more normal form of daydream that exists in almost all people. The systematic phantasies are repeated and consistent, the dreamer imagining the same sequence again and again. Systematic daydreams are more likely to indicate the personality traits of the individual, and even to influence his reactions to his real experiences. A system of thinking may be devised, based on phantasy, that causes less attention to be paid to the real world and which in some cases may absorb the individual entirely. It is obvious that systematic phantasies are concerned with more serious and permanent problems than are casual ones, yet repeated daydreams are sufficiently common that they cannot be said to indicate an alarming maladjustment.

Borrowed Phantasies. The world is full of ready-made daydreams that individuals can adopt without having to go to the trouble of inventing new ones for themselves. These phantasies are found in romantic novels, in most motion pictures and in the existence of hero-worship. The plots of many imaginative stories and motion pictures are highly improbable, and designed to represent the attainment of satisfactions that are impossible in real experience. The reader or spectator participates

in the story by the use of the "identification" mechanism which was described in the preceding chapter. When the principal character of the story rises to success against great odds, the reader partakes of the satisfaction picturing himself, in some degree, as the person in the imaginary situation. When the stalwart star of the motion picture holds the lovely heroine in his arms, the love-lorn movie fan, of either sex, feels vicariously an attenuated form of the love satisfaction. That stereotyped plots such as the Jack-the-giant-killer motif and the Cinderella theme are repeatedly successful in popular fiction and in the moving pictures, indicates the adjustive value that these situations have for millions of normal people.

This type of phantasy mechanism is a common accompaniment of the reduction of attitudes of inferiority. It was very prominent in the case of James G., previously described. This boy had so thoroughly identified himself with the heroes of the wild-west movies that they were his chief interest and his vocational ambition was to be one of them. James's excessive reading of boy-adventure books in which adolescents little older than himself perform extraordinary feats of accomplishment or daring, points to the same adjustive purpose.

Hero-worship acts as a form of phantasy. Youngsters attach exaggerated values to persons who are prominently associated with some notable achievement that is within their comprehension. They avidly read of soldiers, aviators, explorers and prominent baseball players and play at being these persons or of duplicating their accomplishments. Souvenirs of these individuals and personal contacts with them have satisfaction value through a mechanism closely related to that of phantasy. Similarly, less prominent children and adults seek the notice and approval of those who are more conspicuous and gain personal satisfaction by basking in the light of their reflected glory.

Daydreaming Among Normal People. To ascertain the extent of daydreaming among normal young people, the writer devised a questionnaire which was answered by 195 college students. Twelve types of daydreams supposed to be among the commonest in occurrence were described and questions were also asked

about worry, about repeated or systematic daydreams and about other types in general. Full descriptions of the types of daydreams were read to the students, who responded by indicating if they had *ever* had that variety of phantasy, if they had daydreamed it *frequently* and if they had done so *within the thirty days preceding* the experiment. The questionnaire was administered under conditions conducive to truthful answers and the papers were unidentified except for sex, college year and age. The group consisted of 64 men, mostly students of engineering, and 131 women who were about evenly divided between courses in practical arts and fine arts. No freshmen were included, and the three higher classes were about equally represented.

The principal results are shown in Table 2. The frequency of occurrence of many types of daydreams is striking. The average number of types ever daydreamed was 13.35 for the men, 12.42 for the women. The average number daydreamed frequently by the men was 5.54, by the women 6.21. The average

TABLE 2. THE OCCURRENCE OF VARIOUS TYPES OF DAYDREAMS AMONG NORMAL COLLEGE STUDENTS

Based on questionnaire responses of 64 men and 131 women, upper class college students. (Shaffer, 1935.)

	Per cent of students reporting each type					
	Ever?		Frequently?		Recently?	
	M	*W*	*M*	*W*	*M*	*W*
1. Physical feat	91	60	34	10	30	3
2. Physical attractiveness	89	95	28	73	34	63
3. Mental feat	88	92	47	51	48	42
4. Vocational success	100	98	75	76	81	69
5. Money or possessions	100	97	72	75	69	66
6. Display	78	76	19	21	22	16
7. Saving	89	63	13	11	14	5
8. Grandeur	67	48	17	5	11	7
9. Homage	81	72	16	19	16	13
10. Sexual	97	96	73	76	74	73
11. Death or destruction	39	44	8	2	9	9
12. Martyr	70	79	5	21	9	15
13. Worry	92	89	44	57	45	56
14. *Other types*	63	53	30	21	30	20
15. *Repeated Daydreams (any type)*	89	93	55	51	48	51

number of types of daydreams indulged in during the previous month was 5.89 and 5.62 for the two sexes respectively. Only one man and three women, about two per cent of the entire group, reported no recent daydreams. Sex differences were not very great, except for a tendency of the men to daydream more frequently of physical strength and for the women to prefer the phantasy of physical attractiveness, which is not surprising. The "saving" and "grandeur" daydreams were somewhat more frequent among men, while the women showed a slightly greater preference for the "martyr" rôle. That approximately half of the group reported repeated or systematic daydreams within the past month certainly minimizes the pathological significance sometimes attached to this phenomenon.

Although the results of this experiment cannot be assumed to be perfectly reliable, they certainly show that daydreaming is an exceedingly common and therefore, in the statistical sense, a normal form of human behavior. The occurrence of daydreaming cannot be taken as a symptom of maladjustment. Only an excessively absorbing amount of phantasy, which of course could not be detected by the questionnaire, is indicative of an undesirable condition.

Values of Phantasy. Not all daydreams are maladjustments, for in many instances they may serve constructive as well as adjustive purposes. It is sometimes difficult to distinguish between phantasy and planning. For a young person to daydream of vocational success or of creative activities may in many cases lead to the achievement of these aims in reality. Today's daydreams often become tomorrow's accomplishments. The great scientist is distinguished not so much by the laborious collection of data as by seeing the facts that he gathers in strikingly new arrangements and meanings. Creative thinking is thus an imaginative act. The process of the mental incubation of a discovery lies near to the realm of phantasy.

Aside from this practical utility, normal phantasy has ameliorative and recreational values that may serve desirable ends in adjustment. Phantasies of various kinds can act as balancing factors to give a proper proportion of satisfaction to an indi-

vidual's life during periods when social adjustment is unusually difficult. The prevalence of daydreaming indicates that all persons need such a compensation, which most of them use without becoming too immersed in unreality. In a broader meaning of the term, phantasy underlies all art. A world without phantasy would be one without music, literature, painting or drama, and therefore a much less pleasant place in which to live. So long as a balance between active adjustment and imagined satisfaction is maintained, phantasy is by no means undesirable. Perhaps, in a sense, the extremely unimaginative person is as one-sided and maladjusted as the one of opposite characteristics who depends too much on daydreaming.

Undesirable Aspects of Phantasy. In normal phantasy, the individual makes his dreams serve as an end to real accomplishment or else relegates them to a special period of time devoted to recreation. To the extent that either of these conditions is violated, daydreaming becomes nonadjustive and undesirable from the point of view of mental health. The simplest evil of daydreaming is that it is a waste of time. When a person with a habit of phantasy encounters difficulty, especially in quiet work such as planning or studying, he is likely to wander from the task into a maze of imagined pleasures or achievements. Many students could accomplish their work with twice or thrice their present efficiency, if they could avoid daydreaming. Some of the time saved could then be spent in whole-hearted enjoyment which would be more satisfying than the stolen hours used for daydreams which often leave a sense of frustration after them.

Another undesirable result of excessive phantasy is that the daydreamer achieves the satisfaction of his motives without real accomplishment. Since he imagines all of his wants fulfilled, his drive-stimuli are less likely to spur him to active effort. Persons who daydream to a great extent are often inert in character and lacking in adjustive activity. This is because they have no need to adjust outwardly, their adjustments having been taken care of by their inner revery.

When, through daydreaming, romantic attitudes have been

built up concerning the future possibilities of a career, an undertaking or a marriage, the actual realization is likely to be a keen disappointment. The daydreamer is accustomed to the extreme satisfactions of his imagined successes, and so finds the rewards of reality pale by comparison. Many young people form rosy misconceptions of the occupations that they are planning to enter. The law student imagines himself orating before the Supreme Court, the prospective nurse pictures herself as soothing the fevered brow of illness. If too much dependence is placed on these romantic phantasies, the drudgery and unpleasantness that form such a large part of any occupation will cause a serious disillusionment. A large number of marriages fail for a very similar reason, when actuality fails to measure up to the dreams of romance.

The cure of undesirable amounts of phantasy consists principally in remedying the fundamental causes of the maladjustment that necessitate this form of substitute satisfaction. To a certain extent, however, daydreaming may be corrected by reforming the habits that have led to its existence. It is important for the dreamer to realize that daydreams can be made to serve useful ends. To be afraid of them or to regard them as an irreparable abnormality only increases the maladjustment and makes matters worse. For this reason it is unhygienic to scold an individual for daydreaming or to make him feel inferior because of the habit. The moderate daydreamer should strive to make his phantasies lead to activity. If this is done, they become plans for achievement instead of substitutes for it. It is also desirable to arrange, for one's self and for others, that greater satisfaction shall come from real achievements than from daydreams. When motives are adequately reduced by overt means, the need for daydreaming will be minimized.

RETROGRESSION

Adjustment by Retreating. When an individual is frustrated in the attempt to reduce his drives, a very natural thing to do is to try again the mechanisms of adjustment that were satisfy-

ing in an earlier developmental period. There is considerable truth in the common sayings that the maladjusted adult or adolescent is acting in a childish manner or that the problem child is infantile in his behavior. In some instances this phenomenon is due to a failure to progress, to the fact that the person has never outgrown adjustive habits that should have become outmoded. This aspect of adjustment will be considered later under the category of "maldevelopment." In other cases, the individual has at some time attained a more mature status, but may be said to retreat to a former set of habits. The solution of an adjustment by returning to mechanisms more appropriate to a lower age level will be termed *retrogression*.[4]

Retrogression may be considered as a withdrawing type of defense in that the individual does not combat his difficulties directly, but instead retreats to an inferior type of adjustment. Unlike the mechanisms that have so far been considered, however, there is no definite pattern of behavior that can be designated by this name. Retrogression is not a true mechanism, but is a general characteristic of many forms of maladaptive behavior.

Retrogression is often seen at an early age, when the child of two or three years of age attempts to adjust by reverting to the helplessness and utter irresponsibility of earlier infancy. An anecdote is told of a two-year-old (Watson and Spence, 1930) who no longer received the undivided attention of her parents because of the advent of a new baby brother. One day she fell, and remained on the floor crying and saying "I can't get up, I'm too little." The child thus sought the parental aid and attention to which she had been accustomed as an infant. It is quite common for an older child to lose his toilet habits upon the arrival of a new infant in the home. This is a retrogression and a bid for special consideration as a young and helpless individual. In such cases, the child may be cured by retraining and by

[4] This tendency has often been called "*regression*." The term is changed here because the psychoanalysts use "regression" in a rather different sense, and because some other writers have designated all pronounced forms of seclusiveness or withdrawing as "regression," which is incorrect and misleading.

emphasizing the pleasures and advantages of greater maturity.

Among adolescents and adults the way is paved for retrogression by overindulgence and overprotection received from the parents in childhood. "Homesickness," a phenomenon frequently encountered among college students, is essentially a retrogressive maladjustment. The student who shows it has usually become excessively attached to members of his family, and depends on them to comfort him, to defend him against the world and to make his decisions for him. Upon leaving home he finds the new environment unsympathetic for he is given no special consideration by other students or by teachers, and misses the many loving attentions that he received from his parents. If his condition is uncorrected the student shows fear and anxiety and suffers from physiological evidences of persistent emotion, such as indigestion with secondary symptoms of loss of appetite or headaches. If he finally convinces himself and others that he is physically ill, the retrogressive attitude has won its point, for now the student may return to his parents. Another period of life in which retrogressive tendencies are frequent is when a young adult first attempts economic independence. If he is unprepared to make his own decisions and to forfeit the privileges of being supported, he may find his position distasteful and quit it, usually with appropriate rationalizations that satisfy himself and his fond parents. This style of retrogression is probably commoner among young women than among young men because of differences in social expectation and in economic pressure.

The Conditions of Retrogression. The primary condition underlying retrogression is, of course, the failure of the individual to cope with his present adjustment problems satisfactorily. When frustrated in a new situation every person tends to resort to habits that have been successful in the past. This trend can be seen even in the behavior of animals subjected to laboratory experimentation. In human adjustments, the old devices are usually found ineffective and are cast off, this constituting the normal course of trial and error. If through some circumstance the backward course of adjustment

is successful, it will be perpetuated. The chief factor that makes retreat possible is the willingness of parents to promote it. Many parents resent the growth of their children into mature and independent persons and act in such a way as to keep them infants, especially in psychological dependence, as long as possible. Such parents do little to prepare their children for independence and hence increase the likelihood of retrogressive behavior. The habit of returning for protection is promoted like any other habit of personality, by satisfying repetition over a period of years.

Another factor that underlies retrogressive behavior is the tendency to remember only the pleasant experiences of the past, forgetting much of the unpleasant. This causes adolescents and adults to regard childhood as a period of unadulterated pleasure. The phenomenon has been styled the "Old Oaken Bucket delusion," after the sentimentally reminiscent song.[5]

> "How dear to my heart are the scenes of my childhood,
> When fond recollection presents them to view!"

Some further facts on the selective forgetting of the pleasant and the unpleasant will be presented in the next chapter. This fallacy of memory contributes to the retrogressive attitude, for the pleasantly successful adjustments tend to be cherished and remembered, while the accompanying difficulties of the earlier developmental period are largely forgotten.

SUGGESTED READINGS

Additional illustrative material on withdrawing as a form of defense is given by Morgan, *Psychology of the Unadjusted School Child*, chaps. 7, 8, 9 and 10; Sherman, *Mental Hygiene and Education*, chap. 9; Zachry, *Personality Adjustments of School Children*, chaps. 2 and 4.

The acute forms of withdrawing (dementia praecox) are described by Dorcus and Shaffer, *Textbook of Abnormal Psychology*, chap. 8; Fisher, *Introduction to Abnormal Psychology*, chap. 14; and Morgan, *The Psychology of Abnormal People*, chap. 14. As an antidote against too great an enthusiasm for an entirely psychological explanation of the psychoses, however, Moss and Hunt, *Foundations of Abnormal Psychology*, chaps. 5 and 20, should be read.

[5] Morgan (1924) ascribes this phrase to Dr. Frederic Knight.

CHAPTER VIII

FEAR AND REPRESSION IN ADJUSTMENT

FEAR AND ADJUSTMENT

Normal Stimuli for Fear. Strong emotional responses of an undifferentiated character are natively elicited by stimulation of an excessively intense or tissue-injuring nature. Rather early in childhood a number of more specific emotional patterns emerge from the diffused matrix of primitive emotion, this individuation arising from the operation of processes of adjustment and learning. The responses to overwhelming situations such as loud noises and violent loss of support, toward which the child can make no effective adjusting response, become crystallized into the pattern of emotion, disorganization and flight that may be designated as fear.

Many situations in the common experiences of older children and adults also call forth a normal fear response. In some instances fear is the response to a danger signal or symbol of impending possible injury. Because he has learned the consequences of various situations, the individual may react to the menace of prospective injury with the same emotional quality as to the injuring situation itself. The greatest number of fear experiences of normal adults probably occur in situations involving a narrow escape from catastrophe, such as occur occasionally when driving an automobile. Fear responses are most readily aroused in adults when an *intense* stimulation is presented very *suddenly*, under circumstances that permit the use of *no habitual adjustment* that would enable the individual to cope with the situation. Suppose, for example, that a young man unaccustomed to the woods is walking in a lonely forest path and suddenly hears a strange loud noise, a cross between a shriek and a groan. He starts; his heart begins to pound; he looks about frantically; his knees tremble. He vacillates between flight and investigation, but cannot control his strong

fear. Eventually he may discover that the cause of his disturbance comes from the trunks of two trees which make the noise as they rub together in the wind. The suddenness and unfamiliarity of the situation are important factors in determining the emotional response. If the same sound had been heard in a reassuring setting as when accompanied by friends or on a city street, it would have caused no strong reaction. The individual had no ready response to make to this noise, but if he had encountered it many times he would have been prepared to react to it in a definite way and would thus have avoided the disorganization of emotion.

Strong fear is inevitable in some situations, even in the case of persons of entirely normal balance and experience. Fear serves no constructive purpose, however, but is always accompanied by a maladjustment of at least partial extent and temporary duration. The fear-struck person's responses are fragmentary and ineffective and only when the emotional state is somewhat controlled can a useful adjustment be made. Fears should decrease as the individual gains wider knowledge of the situations in which he may find himself and as he acquires habits for adjusting to them. It is possible to develop habits of confidence and tendencies to investigate unfamiliar situations rather than to flee, these responses leading to the conquest of fear. Variations in these habits account for individual differences in fearfulness that normal persons show when confronted with the same situation.

Fears in Maladjustments. Just as a transient fear denotes a temporary disorganization of behavior, persistent fear is characteristic of many types of maladjustment. It is unfortunate, however, that the designation of "fear" has often been used in loose and inexact meanings in relation to maladjusted behavior. If the presence of emotional tension plus the lack of rational and effective action constitutes fear, then all maladjustments are fears and the term loses much of its significance. It must be recognized that many conduct disorders are evolved as means for reducing fear. If these are successful the individual's behavior is warped, but the strong emotional state is no longer

present. Defense mechanisms arise as responses to fears of inferiority or of social disapproval. The compensatory mechanisms dispel the state of fear by the overassertion of confidence. The withdrawing forms of conduct are reductive because they take the individual away from the fear-producing stimulus. In phantasy, the emotion-arousing stimuli are excluded by the representation of the opposite situations of adjustment and satisfaction. Fear has an important rôle in the causation of defense mechanisms, but defensive behavior is the reduction of fear rather than its manifestation, and the strong emotion itself is not present when such conduct is shown.

Strong fear is directly evidenced in two other kinds of maladjustment, which are *worry or anxiety* and *phobia*. In worry or anxiety, the individual shows a persistent emotional state which is relatively independent of the immediately present situation. The stimuli for fear occur in retrospective recall of past events or else in the anticipation of the future. In this condition the worrier is acting nonadjustively to a problem which is usually broad in nature, involving a large segment of his experience. Phobias, in contrast, are fear reactions made to a restricted class of stimuli and usually called forth only in the presence of the feared object. The stimuli for phobias often seem inexplicable and have little relationship to the major problems of the individual's life adjustment. Persons may be discovered who have phobias for high places, for small enclosed spaces or for certain animals. In fact, this irrational type of fear seems attachable to almost any situation that may be encountered. Since phobias offer the most convenient approach to the study of certain of the effects of fear on adjustment, this condition will be considered first.

PHOBIAS

A Case of Phobia. Mildred K. had an intense fear of eyes. Her friends noticed that she never looked at anyone directly, but always glanced away while talking. This, the young

woman explained to the psychologist, was because the sight of an eyeball caused her to feel an uncontrollable emotional panic. She had experienced this phobia for a long time. She was unable to remember when it started, for it seemed as if she had been afraid of eyes all her life. Recently the phobia had become intensified, and some additional symptoms of a related nature had appeared. Mildred had frequent nightmares of persons whose eyes were horrible and staring and whom she took to be insane. The young woman also had a compulsive tendency to repeat the verbal phrase "Fear looking out of her eyes," in auditory or verbal imagery. She found herself saying these words over and over, seemingly unable to stop. Because of her preoccupation with the phobia and because of the general emotional upset that it entailed, Mildred's efficiency was seriously impaired. She found it increasingly difficult to study effectively and to concentrate on material that she was reading. As a result, her academic standing was being affected, and her social relationships were approaching ruin.

The psychologist explained to Mildred that such fears were often associated with some forgotten incident relating to the stimulus for the phobia. Mildred was told to endeavor to reinstate the feeling of fear clearly, and then to try to recall any past event that might have connection with it. She was informed that this recall would be most likely to be effective when she was reclining or drowsy and about to go to sleep. Her first few attempts at recollection were unsuccessful. She could remember no incident that might rationally have caused her fear. On the fourth consultation she reported the memory of a moving picture that she had seen when she was about twelve years old. In this picture, an alleged comedy, an escaped insane person steals an airplane and ascends with a passenger, who does not discover the character of his pilot until in the air. The crude motion picture represented the insanity by the wild and staring eyes of the player. Mildred identified this character as the wild-eyed person of her dreams. The psychologist did not consider this memory to be fundamental to the disorder, as the excessive reaction to this moving picture seemed an

early symptom of the phobia rather than the cause. He therefore instructed Mildred to continue her attempts to recollect.

A week later Mildred returned saying that she had recalled another incident connected with eyes. She remembered herself as a child of about seven, when she had gone to visit some relatives. One of these, an aunt, was blind. Little Mildred had set out to explore the house where she was making this visit, and with considerable excitement and some fear of being caught in the process, she was peeping in the bureau drawers. As she opened one drawer, out of it stared two horrible eyes, eyes perfectly real, but without a face. These were some glass eyes belonging to the blind aunt. Mildred fled in terror. Even in telling the story to the psychologist she showed evidence of excitement and wept. She reported that she had never told anyone before. At the time, she was afraid of parental censure, and then she "forgot" the incident. Mildred was made to recite the incident over and over again, and to recognize that there was nothing unusual or shameful in her childish exploring activities. The telling of the experience relieved her in some degree and in subsequent weeks the phobia of eyes was greatly diminished and seemed to be disappearing.

A few other factors relating to the case should be noted. In the first interview the psychologist asked the obvious question concerning the existence of blind persons in her family. Mildred told calmly of the blind aunt, but this did not at once effect the recall. After the remembering of the motion picture, the psychologist explored the possibility of a fear of insanity, but no basis for this was discovered. A reason for the recent greater intensity of the phobia was found in Mildred's home situation. Her father was under considerable risk of losing his position, and the girl had reacted strongly to this by a general state of worry and tension, which had apparently found an outlet in the old phobia. Further consultations were held which helped her to assimilate her home problems.

A considerable number of other cases of phobia have been reported which resemble the instance of Mildred's fear of eyes

in their most essential characteristics. A few of these cases are briefly summarized here.

A phobia in a medical officer of the British army was described by Rivers (1920). This officer suffered from a fear of enclosed places, a "claustrophobia," so intense that he preferred to spend the night in an open trench under fire rather than to remain in a dugout. He also showed many nervous symptoms, including battle dreams and stammering. The fear of closed spaces had existed from boyhood. Under the guidance of the psychiatrist, he eventually recalled an incident that had occurred when he was three or four years of age. He had been caught in a narrow passageway from which he could not escape and had an intense fear of a dog that was present. He never told of the incident. The phobia was reinforced in later childhood by many sleepless nights of terror when he had to sleep in a "box-bed" set deep into a tiny alcove. The fear of the alcove arose from the earlier fear experience and served to intensify it. Upon the recall of these experiences the phobia was cured, although the other nervous symptoms which were not associated with the childhood incident, remained unmodified.

Bagby (1928) cites two cases which have become classic descriptions of phobias. In one, a young woman suffered from childhood from an intense fear of running water, particularly if it made a splashing sound. This caused difficulties in traveling and even in bathing. An incident that had happened when she was seven years old was later recalled by the visit of an aunt. The little girl had, contrary to the orders of her parents, gone astray and had fallen into a small waterfall from which she was rescued by the aunt. Fearing punishment for disobedience, she never told of the escapade, and the aunt went away leaving her without a confidante. The incident was "forgotten," but the fear persisted. After recall had been effected the phobia diminished and eventually disappeared.

Another case reported by Bagby concerned a man of fifty-five who had a life-long phobia of being grasped from behind. He developed the habit of looking over his shoulder from time to time to see if anyone were following him. A visit to his boyhood home caused the recollection of an incident related to the phobia. A grocer, from the front of whose shop he had been accustomed to steal peanuts, hid and suddenly grabbed him in the act. The boy fainted. This experience had never been told. With its recollection the phobia disappeared.

Many phobias relate to the sexual functions. Fisher (1929) describes a man who suffered from a psychological impotency. He had supposed it to be an organic condition, but reported a feeling of fear whenever he attempted sexual intimacy. Only when assisted by the psychologist did he remember a long-forgotten incident when he had been caught, at the age of eight, in sex play with a little girl of the same age. His parents punished him severely and aroused in him an intense feeling of shame, guilt, and fear with which he still responded to any sexual situation, although the original situation was not remembered. Information is not given as to the extent of cure effected by the recall of the childhood experience.

Characteristics of Phobias. From examination of a large number of cases of phobias certain uniformities can be discovered.

1. The phobia dates from an intense fear-producing experience, usually occurring in childhood.

2. The sufferer is unable to recall this experience until assisted by the special techniques used by the psychologist. The remembering of the incident is said to be "repressed."

3. The circumstances of the fear experience were such as to provoke a sense of shame or guilt, so that the subject does not tell of the incident. In most cases, the subject does not even think of it or tell it over to himself in inner speech, because of the unpleasantness involved.

4. The phobia, although initiated by fear in a specific situation, spreads to a class of objects. Thus Mildred feared all eyes, and Bagby's case feared all running water, although specific eyes and specific waters first had evoked the emotion.

5. Upon the recall of the fear-producing experience, the phobia is greatly lessened. On telling it over several times and assimilating it, the phobia disappears.

The first of these facts is the least difficult to understand. In the first instance, the phobia is a conditioned reaction. It is the same kind of a phenomenon as occurs when the burnt child fears the fire, or when Watson's experimental subject fears the rat. It may be objected, however, that many children have similar experiences involving fear, which do not give rise to

phobias. The writer, for example, at the age of four fell in a creek when warned not to go near the water, under circumstances almost identical to those of Bagby's case. No phobia developed. The distinguishing factor seems to have been the absence of repression. The writer was caught in the act, was duly punished, and the incident was much talked about. In this way the experience was thoroughly rehearsed, was verbally repeated and was remembered. Phobias seem more likely to arise when the conditioning experience is followed by repression. This concept is an important one, and worthy of thorough investigation.

THE CONCEPT OF REPRESSION

Forgetting the Unpleasant. A casual thought would seem to indicate that the ordinary process of forgetting by which one forgets unreviewed lessons, infrequently used telephone numbers and the like, might be inadequate to account for the peculiarly active kind of forgetting involved in phobias. The concept of repression forces us to make a careful examination of the phenomena of remembering and forgetting to see what rôle unpleasantness, shame, guilt and the like play in the selection of what is to be remembered.

An example of forgetting intermediate in degree between ordinary forgetting and repression is found in the failure to recall names, places and engagements that should have been remembered, a common experience in most people's lives. Of course, most examples of such forgetting are due to inadequate initial impression or to interference from other interests and activities. One cannot be expected to remember a name that has been heard only in one mumbled introduction, for it is not clearly perceived even at the moment. Other instances occur, however, in which a well-learned response is peculiarly elusive. The failure to remember then seems absurd and inexplicable and quite unlike ordinary forgetting. William James described the introspective experience of such a failure of recall in striking terms.

> The state of our consciousness is peculiar. There is a gap therein; but no mere gap. It is a gap that is intensely active. A sort of wraith of the name is in it, beckoning us in a given direction, making us at moments tingle with the sense of our closeness, and then letting us sink back without the longed-for term. If wrong names are proposed to us, this singularly definite gap acts immediately so as to negate them. They do not fit into its mould.... The rhythm of a lost word may be there without a sound to clothe it; or the evanescent sense of something which is the initial vowel or consonant may mock us fitfully, without growing more distinct. Every one must know the tantalizing effect of the blank rhythm of some forgotten verse, restlessly dancing in one's mind, striving to be filled out with words.[1]

Sigmund Freud in his *Psychopathology of Everyday Life* was one of the first to attempt an explanation of the forgetting of names as something more than a mere accident or failure of association. An illustration similar to those employed by Freud offers a convenient approach to the concept of repression. A graduate student of psychology had made a number of contacts with another student who was employed as a night clerk in the university dormitory. He talked with this young man a number of times and heard his name mentioned frequently, yet he never could remember it. This was all the more remarkable since the student was pursuing a course in optometry and had assisted the young psychologist in having an eye examination made by one of the instructors in that department. By all ordinary considerations, the name should have been remembered, but it was most elusive. Deciding that the forgetting was of the type described by Freud, the graduate student secured the name from a mutual acquaintance. The name was Bishop, surely not one of intrinsic difficulty. Using this name as a starting point, a study was made of the associations involved. After nearly an hour of associative effort in meditating on the name, a significant incident was suddenly and vividly remembered. The student recalled that when about ten years old he had set out for a Sunday afternoon walk alone, his usual companions on such an excursion being out of town.

[1] James, William, *Principles of Psychology*, vol. 1, pp. 251–252. New York, Holt, 1890.

Walking along a road on the outskirts of the town he saw two boys sitting on a fence at some distance and waved to them, thinking that one of them was a boy he had known at camp. The boys called back, and came running. They proved to be total strangers and informed the youngster that he had asked them to fight, and that the challenge had been accepted. The odds looked too great and the ten-year-old resorted to flight, only to be caught and ignominiously beaten. The disgracefulness of this situation for a boy of ten is apparent. To have been beaten in a fight was bad enough, but to have been beaten after having run away was unthinkable. The incident was never disclosed to anyone. It was repressed, and recalled with difficulty even when an adult. The name of the camp acquaintance, for whom one of the tormentors was at first mistaken, was Bishop. The name had somehow been tied to the incident, and had been repressed with it. The student suddenly realized that he could not remember ever having had any other male acquaintance of this name. Possibly many Bishops had been met — and forgotten. The mechanism did not operate in the case of women and girls, and no difficulty was experienced in recalling the name when applied to them.

The psychoanalytic or Freudian school attempts to account for the pathological forgetting of names and other phenomena involving repression by means of the concept of the unconscious. Because of its painful or shame-provoking nature the memory is incompatible with the individual's conception of himself, and hence cannot be permitted to remain in consciousness. The unwanted memory is therefore ejected by force into the realm of the unconscious. Any associated names or ideas that would tend to bring it up are repressed also. This is, with some simplification, the concept of repression held by the psychoanalysts. The harm caused by repression is supposed to arise from two sources. In the first place it is conceived that a certain amount of mental energy must be expended in order to keep the painful memory repressed, resulting in a general weakening of personality. Also, the repressed memory is supposed to remain active in the unconscious and seek to come out in dis-

guise, thereby causing eccentricities of behavior, including phobias. This psychoanalytic explanation is so simple and so easy to understand that its wide popular appeal is not surprising.

The objective psychologist does not agree with the psychoanalyst's conception of "repression into the unconscious." As a descriptive analogy this scheme is not without merit, but it postulates a topography and a set of forces that cannot be demonstrated to exist in fact. No such place or location as an "unconscious" is physiologically conceivable. The forces with which ideas are said to "conflict" and by which one "represses" another, verge closely on animism or demonology. The temporarily forgotten response cannot be said to reside as an active entity in any particular region. Even ordinarily remembered responses are not "stored away" in the mind, as the popular but incorrect conception holds. These responses exist only when they are made, when they are again elicited by the application of the proper stimulus. From the objective point of view, repression can only be described as a failure to make a certain response, when the stimuli are presented that might be expected to evoke it. If this phenomenon can be shown by reliable methods to exist, and if it can be explained in terms that are compatible with other facts of objective psychology, then repression may be a valuable concept. The objective concept of repression must be quite different, however, from the psychoanalyst's "repression into the unconscious."

Evidence Concerning Selective Forgetting. Since the case-study method is notoriously unreliable, especially when reminiscences of long past events are concerned, it is important to seek more conclusive evidence of the existence and nature of the alleged tendency to forget the painful and unpleasant. If this process really exists it should be present in the ordinary behavior of normal people as well as in pathological cases, although probably in less marked degree in the former. Experiments of a highly valid type can be devised to ascertain the extent to which people tend to remember that which is pleasant more permanently than that which is unpleasant. In fact,

some thirty-five experiments have been reported that deal more or less directly with the effect of pleasantness or unpleasantness on retention.

The most precise and pertinent type of study is well illustrated by that of Meltzer (1930 b). On a day following a Christmas vacation, one hundred thirty-two college students were asked to list and briefly to describe all of their experiences of the vacation. Each experience considered pleasant was marked P, each unpleasant recollection was marked U. These students reported, in the first instance, 2231 experiences, of which 1391 or 62.43 per cent were pleasant, 838 or 37.37 per cent unpleasant. This initial fact presents no positive evidence on selective forgetting, as it is quite possible that college students experience more pleasant events during a vacation. The important part of the experiment was the subsequent attempt to recall these same experiences. Six weeks later, without warning, the subjects were asked again to recall their vacation experiences. The "new" recalls, those experiences remembered on the second recall but not on the first were eliminated. The mean per cent of pleasant experiences retained over the six-week period was 53.03. The per cent of unpleasant experiences retained was 39.75. The difference of 13.28 per cent is 6.88 times its probable error, indicating that it is a reliable one and not likely to be due to a chance fluctuation. Meltzer's experiment, on the whole, confirms the case-study evidence. Even with the relatively mild unpleasantness of such ordinary experiences, there is a marked average difference in favor of the memory of the pleasant, after only a short interval of time. There were, however, considerable individual differences in the forgetting of the pleasant and unpleasant, among the various subjects. When their individual records were examined, 56.49 per cent were found to have retained a greater proportion of P than U experiences; 7.64 per cent showed no difference, while 35.87 per cent of the group (termed the "pessimists" by Meltzer) retained a greater proportion of U than of P experiences.

Another excellent experiment by Stagner (1931) gave further

significant results. A group of college students was asked to recall the most pleasant event of the preceding fifteen days and then to write out as many associations as possible, either trivial or important, connected with the event. A similar procedure was followed for the most unpleasant event in their recent experiences. After a further interval of fifteen days, there having been no warning that a second recall would be demanded, the record of the two incidents was handed back and the subjects were asked to reproduce the associations previously given. The results showed that the per cent of P associations retained was 54.4 and that the per cent of U associations recalled was 43.4. The difference of 11 per cent was statistically reliable. This study shows that the repression of the associations of unpleasant events, as well as that of the experiences themselves, is experimentally verifiable.

A survey of all of the other studies in this field that are discoverable yields generally confirmatory results. A total of six experiments on the recall of pleasant and unpleasant life experiences have been conducted under properly controlled conditions. Of these, five show the forgetting of the unpleasant, while one (Wohlgemuth, 1923) which was performed with British school children showed inconclusive evidence. Nine further studies on the recall of actual experiences, ranging in date from 1898 to 1925, show positive results in seven instances, negative in one and inconclusive in one, but all of these were subject to serious experimental errors, the chief mistake being the assumption that persons initially experience the pleasant and the unpleasant in equal amounts.

Another experimental attack has been to cause subjects to memorize lists of words, pairs of names and faces, poetry, and other materials which were paired as pleasant and unpleasant in content. Of twelve such researches, six found that the pleasant materials were learned more readily, six found no reliable differences, while none found that the unpleasant was better retained. Attempts have been made to note the comparative readiness to give pleasant and unpleasant associations to lists of words, two out of three such experiments showing a

marked predominance of the pleasant. Studies of the permanence of memory for pleasant and unpleasant colors and odors have been less conclusive, only one research of five yielding positive results.[2]

The preponderance of the experimental evidence confirms the results of the case-study approach and indicates that the phenomenon of repression does exist. Experiments that more nearly reproduce real life situations involving the retention of personal experiences show the forgetting of the unpleasant in most striking degree. Yet, as might be expected, repression is subject to considerable individual differences and does not appear in the behavior of all persons or in all circumstances. Even with this reservation, the occurrence of repression seems sufficiently widespread to justify its acceptance as an important factor in determining human conduct.

An Objective Account of Repression. A psychological explanation of repression may now be attempted, using concepts of an experimental and verifiable nature which will be drawn largely from the study of the conditioned reaction. Ordinary forgetting is accomplished by the process of *extinction.* One of the chief factors in this process is the lapse of time, another is the repetition of the conditioned stimulus without reinforcement by the originally adequate stimulation. If, in a conditioned reaction experiment, the bell is rung again and again without the presentation of the food, the dog will cease to salivate for the bell. Similarly, if the episode relating to the name "Bishop" had occurred without repression, the name for a while would have recalled the incident, but after the subject had met many people of that name and had used it in many varied situations, "Bishop" would no longer have served as a stimulus for this particular memory unless assisted by additional cues. Extinction would have occurred by the repetition of the stimulus without its original setting. Memories that are

[2] Of the 35 experiments here cited, the earliest 26 are summarized by Meltzer (1930 a). The other nine are: Meltzer (1930 b), Thomson (1930), Stagner (1931), Jersild (1931), Cason (1932), Cason and Lungren (1932), Bunch and Wientge (1933), Silverman and Cason (1934), and White and Ratliff (1934).

extinguished are not entirely lost, however. When an ordinary stimulus-response connection has been established and then extinguished, it can usually be relearned with fewer repetitions than would be necessary for learning an entirely new response. This has been demonstrated by numerous memory experiments using the method of relearning.

It is evident that a repressed response is not extinguished in this manner for it can be recalled under certain appropriate conditions without relearning, as is shown in the technique for discovering the experiences causal to phobias. The failure to recall a repressed experience is thus due, not to extinction, but to the more positive process of *inhibition*. In the initial experience underlying a repression some object, name or event occurs simultaneously with a response of shame or guilt and thereby becomes connected with it. Since most persons have learned to make an avoidant response to shameful or guilty feelings, which are a form of fear of social disapproval, the recall of the painful event will be avoided. This is accomplished by means of the inhibition of recall, by the avoidance of external stimuli that would arouse it and by making substitute responses that serve as distraction activities. The inhibition of recall involves no more theoretical difficulties than does the inhibition of a motor response. If a dog is whipped when he jumps to a table to secure meat, he will soon learn to inhibit this response, even though he has a strong tendency to perform it. Since recall is a response to a stimulus, an individual can learn through painful effects simply not to make the response of remembering. Only that misconception of memory that supposes it to be the filing away of past experiences needs to make an hypothesis as to where the repressed response goes. It does not go anywhere, for it just does not occur. The individual reinforces the process of repression by avoiding the stimuli that would elicit the response of remembering. This fact is very noticeable in phobias, in which the subject prevents the arousal of emotional tension by staying away from closed places, high places, running water, crowds, or whatever is the stimulus for his fear. There is a general tendency for normal

people to avoid the persons and places that have been associated with humiliating experiences. The individual may also assist the process of repression by making substitute responses to the shame-provoking stimuli which serve as distractions and hence help inhibit the recall of unpleasant experiences. Persons with phobias often develop elaborate rationalizations to explain away their fears. Other individuals devise rituals of conduct which are performed in the face of fear-provoking stimuli, these constituting compulsions, which will be described a little later.

Repression as an Adjustment. A viewpoint which supplements the foregoing account in a valuable manner is that which regards repression as a variety of adjustment or species of defense mechanism. The event the memory of which is repressed was a stimulus for a fear of disapproval, hence when the recall occurs it acts as a symbol or substitute for the original guilt or shame-provoking situation. The fear of social disapproval thwarts one of the strongest of the common motives and therefore calls for adjustive behavior. The individual must adjust to the substitute symbol as he would to the disapproval itself. Some persons might make this adjustment by defenses such as compensation or phantasy, but in the cases here considered the subject adjusts by inhibiting recall of the problem. At first many stimuli suggest the recall of the unpleasant experience but the individual learns to make avoidant responses to them. He turns away from any outer stimulus that suggests the experience and inhibits response to any inner verbal stimulus that would tend to recall it. The adjustment may not be entirely successful at first, but in time the subject becomes very skillful in this form of defense and repression is achieved. In the instances where the adjustment results in the forgetting of names or the like, no bad results are experienced beyond slight inconvenience or embarrassment. In the more pronounced cases, repression may play an important rôle in the causation of serious symptoms such as phobias.

In general, repression is a more unfortunate adjustive mechanism than either compensation or daydreaming. In the

first place, it gives no opportunity for the reduction of emotional tensions aroused by situations. Compensation and phantasy have real tension-reducing values for the individual, even though they are antisocial. On the other hand, when a tension is aroused in connection with a repressed experience, reduction is not achieved and the individual stays in a tense, emotional state. This, in part, is the basis of the strength of the emotional reactions seen in conditions involving repression such as phobias and anxiety. A second characteristic of repression is even worse, for it is tension producing in itself. If a response is inhibited when an adequate stimulus is present, a condition of tension and instability is always noted. In the conditioned reaction experiments the presence of inhibition is characterized by tension and by a certain amount of disorganization of other responses. A trained dog that holds back from food at his master's command quivers with this tension of readiness to react. Similarly, the individual who represses or inhibits makes his adjustive difficulties worse instead of remedying them.

Some individuals show more of the tendency to adjust by repressing than do others. These individual differences in the repressive habit are most probably due to variations in childhood experiences, particularly in those relating to the fear of social disapproval. Bagby notes that he knows of no serious phobia in any person who as a child had free and confidential relations with his parents or other advisers. When a child is unfortunate in receiving unsympathetic treatment, so that his confessions of fears, worries or feelings of guilt are met with rebuffs, punishment or disapproval, he will learn not to confide. He will develop a habit of adjusting by repression just as other individuals may learn to compensate or to daydream. There is no sharply distinguished repressed type of person, but this tendency appears to the extent that it was learned in the early trial and error stages of adjustment. Individuals who have learned to repress are likely to suffer throughout their lives from disorders involving fear, because they have no outlet for reducing this type of emotional tension.

THE RÔLE OF REPRESSION IN MALADJUSTMENTS

Repression in Phobias. In cases of phobia, the factor of repression plays an interesting and significant part. The individual who is subject to a phobia usually has developed a habit of repression even before the conditioning experience, which occurs most frequently in early childhood. Because of this habit, or at least associated with it, the individual is likely to be generally maladjusted and to show other symptoms in addition to the phobia itself. That phobias are found only in persons who are "a bit queer anyway" is partially true, such persons having the unfortunate background which predisposes them to repress shameful experiences.

The traumatic experience underlying a phobia represents a double process of conditioning, two varieties of fear being attached to the stimulus by the one episode. First, a fear of strong and direct emotional nature is aroused by the situation, resulting in an ordinary conditioned fear response of the usual uncontrollable character. Second, the individual reacts to this same stimulus with shame or guilt and it becomes a situation requiring adjustment. In keeping with his already established habit, he adjusts by repression, as described in the preceding section. Now the rôle of this repression in relation to the phobia is this: *the repression prevents the extinction of the fear reaction.* In Pavlov's experiments on extinction, the dog was "cured" of responding to the bell by repeatedly ringing it without the adequate stimulus of food being present. An ordinary conditioned fear of dogs is most effectively treated by having the child make many pleasant contacts with the animals. In general, if a fear-producing episode is recalled, repeated verbally and gone over and over again, the experience comes to be regarded as commonplace and harmless. It is no longer a stimulus for fear and no phobia results. The significant fact in cases of phobia is that this "harmless repetition" is prevented from occurring. The sufferer from a phobia is not cured because the repression of recall prevents the original episode from being remembered, repeated and rehearsed. The unrein-

forced repetition of the stimulus cannot occur, and so extinction does not take place. The unextinguished primary fear response is therefore made at every recurrence of the stimulus, with its original intensity relatively unabated. The recall of the repressed experience with the aid of the psychologist is curative because it constitutes unconditioning or experimental extinction. The phobia is usually weakened or cured by this treatment.

In some cases, however, the mere recall of the repressed experience does not cure the phobia entirely. This was true in Morton Prince's case of the young woman who feared church bells, which was previously cited.[3] This young woman's phobia differed from those of the cases described in this chapter in that she still felt guilt and remorse in connection with her mother's death. In most cases, the childhood incident underlying the repression is no longer regarded as shameful, and the adult subject can adjust to it without difficulty when it is recalled. In Prince's case it was necessary to assist the patient to adjust by convincing her that her mother's death was due to uncontrollable causes, and that her own conduct had really been very fine rather than negligent. When the young woman was induced thoroughly to accept this viewpoint, the phobia disappeared. Examples such as this indicate that phobias are problems of adjustment, not basically different from other types of adjustive difficulties. To cure a phobia, not only the recall of the causal experience, but also the individual's readjustment to it, is necessary.

The spread of a phobia to a broad class of stimuli is easily explainable by the conditioned reaction concepts, and further substantiates their application to this class of disorder. All conditioned reactions tend to spread unless they are particularized by a special process of differentiation. This is illustrated by the training of a dog to differentiate between tones. Trained with tone A, he responds at first to B as well. When A is repeated with the food and B is given without reinforcement, he gains the ability to discriminate. Spread is thus

[3] See p. 72.

eliminated by the reinforced repetition of the original stimulus. Repression, which prevents such repetition, leaves the conditioned reaction in its original broad state, as is seen in the cases of phobia. If a laboratory experiment could have been performed, Mildred could have been made to fear glass eyes and not to fear other eyes by repeatedly subjecting her to fright in connection with glass eyes and never with others. This procedure is not suggested as a practical method of treatment, but as an illustration of the point of theory involved.

Symbolic Phobias. Occasional cases of phobia are discovered in which the fear reaction has been transferred from one stimulus to another. In these instances the individual reports a fear of some concrete situation, but investigation discloses that the phobia originally concerned some quite different stimulus for which the present one, by an associative process, has come to be a symbol. Brief descriptions of two such cases will make clear the nature of this type of phobia.

Bingham (1925) has described the case of a twelve-year-old high-school girl of a generally nervous and unstable character who suffered from a fear of open places. This was discovered by her gymnasium teacher to whom the girl had complained that she became dizzy in large, high rooms and hence could not do gymnasium work. In addition to the fear of large places, she had a weak feeling and a tendency toward an abnormally rapid heart beat, which she termed "palpitation." The heart symptom dated from an episode several years previous when the girl had been reading *The Man Without a Country*. When she reached the passage describing the death of the chief character of this book, she became very much excited, found her heart pounding rapidly, and had the sensation of dizziness. Since this time she became convinced that she had a weak heart and was destined for an early death. Her parents became concerned about her heart "palpitations" and took her to a round of physicians and clinics, but this afforded no relief. At this same time the fear of open places became pronounced and the girl could not enter a park or other large place and even disliked passing by such a spot.

A psychiatric investigation showed that the young girl had always had a morbid fear of death. Several incidents involving death, including a "Jack-the-Ripper" scare in her neighborhood and a trolley-car accident in which she had narrowly escaped injury, had made very vivid impressions on her. The fundamental fear that affected the girl's behavior was disclosed as this fear of death. It was discovered that she had always thought of heaven as a large place, and had engaged in many phantasies on this theme. The notion of "large place" became so connected with that of death that the transference of the fear was readily effected. The excessively rapid heart beat proved to be nothing more than a physiological effect of the emotional state and entirely disappeared when readjustment was accomplished. The phobia also was dissipated by explanation and by the assimilation of her fear of death. The case was followed for three years and no subsequent difficulty was reported.

A transferred phobia in an adult, a soldier in service, is related by McDougall (1926). This man had a fear that he would infect people with some disease the nature of which he conceived only vaguely, and had a compulsive tendency to pick mucus from his nose and wipe it on small pieces of paper. This compulsion he rationalized as a precaution against infecting others. These apparent symptoms were a very slight concealment for a fear that he had or would acquire a venereal disease, his concern about which he admitted freely upon examination. As a matter of fact he was uninfected and his fear was unjustified by any rational evidence. Further prolonged investigation disclosed the really basic problem. He was stricken with remorse and shame concerning a sexual relationship that had existed for some time between himself and the wife of his best friend, with whom he had lived. He had repressed this moral issue and had striven not to think of it, but had concurrently developed the phobia. In this case transference of the fear had taken place twice, from his worry over sexual wrongdoing to a fear of infection and thence to the manifest symptom of anxiety lest he infect others.

Although these cases of symbolic fears are rather astonishing, there is every reason to believe that they are genuine and that the explanations cited are substantially correct. Two characteristics of such conduct disorders aid in understanding them. In most symbolic phobias the real or underlying fear stimulus is of an abstract nature, such as death or a moral problem. Since normal people in everyday life tend to represent abstract notions by concrete signs and symbols, it is not surprising that the victim of the phobia should do the same. The symbol is connected with its meaning by associative learning of the common type, arising from the individual's experience. "Open places" becomes a symbol of death by a process not very different from that by which "pi" becomes a symbol for the ratio of the circumference to the diameter of a circle. The second feature of symbolic phobias is that repression has operated in relation to the original fear stimulus itself. The individual has become successful in inhibiting a portion of the response to this stimulus, namely its recognition as the source of the fear. When repression of this type is achieved the person affected may in some instances show only a diffused fear, the cause of which he professes not to understand. This is a form of anxiety and will be described more thoroughly later. An alternative to general anxiety is the acquisition of a symbolic phobia. When the recognition of the original cause of fear has been repressed, almost any associated situation may become a substitute symbol for it. In many cases of absurd fears, the existence of this kind of symbolic transfer may be suspected.

Compulsions. A number of cases of phobia, even among the limited number described here, show the additional symptom of the performance of a compulsive motor act. The man who feared being caught from behind had a compulsion to look around. The girl who feared eyes had an uncontrollable tendency to repeat a certain verbal phrase, even though she realized its lack of good sense and meaning. Compulsive behavior may also be discovered in some persons who do not show a concurrent phobia, but even in these cases the condition is related to phobia by a psychological similarity.

A case of compulsion and phobia of a rather typical nature is that of Miss B., reported by Bagby (1928). This young woman was a teacher, of quiet and retiring disposition. Whenever she was alone in her room, she became troubled with a fear that someone was behind her. The compulsion to look around soon would become uncontrollable, and her fear would usually not subside until she had made an inspection of the entire apartment. She recognized the absurd nature of this compulsive performance, but it was the only thing that would relieve her intense emotional tension. A psychological study of Miss B.'s past experiences revealed what is usually found in cases of phobia, a repressed personality, and a severe fear-conditioning episode in childhood. When a little girl, she had been locked in a closet by her sisters, who went away and forgot about her. Her fear at the time was of some horrible thing in the blackness behind her. After the recall and assimilation of this experience, Miss B.'s compulsive tendency disappeared.

Compulsions serve as distractions and as tension-reducing mechanisms which relieve, in some degree, the fear that is present. Since the operation of repression prevents a direct response to the cause of the fear, the substitute outlet is employed and is given an overestimated personal value by the individual. The compulsion seems baseless, since the recollection of the underlying problem has been inhibited. One of the most frequently reported compulsions is that of washing the hands an excessive number of times. Since most motor acts are performed with the hands, a feeling of guilt or shame becomes attached especially readily to these members. The washing is at first a result of the urge to do something about these guilty parts. The common phrase, "I wash my hands of it," and the ritualistic practices of hand-washing as purification rites are a result of this mechanism, and at the same time a contributing factor toward causing it in individual persons who know of such customs. Shakespeare effectively dramatizes the hand-washing of Lady Macbeth which acts as an atonement for her murders. The hand-washing compulsion is often a result of repressed anxiety about masturbation. If a com-

pulsion is arbitrarily prevented from being performed, a phobia or an anxiety state is likely to ensue. The cure of compulsive acts necessitates the adjustment of the individual to the causal experiences, the treatment being similar to that employed for phobias.

Sex and Repression. A very large proportion of fears, repressions, and anxieties are found to concern the sexual functions of the individual. Some of these are manifested directly in the forms of fear of sex, frigidity, impotence, and in compulsive acts such as exposure of the sex organs which carry a serious social stigma. Many aberrant behaviors in the field of sex are popularly regarded as "degenerate" and "perverse" and are held with an intolerance exceeding that displayed toward any other adjustment problem. Not all sexual maladjustments are manifested by directly sexual mechanisms, however. This area of adjustment is especially fruitful of transferred fears, some phobia, anxiety or compulsion of an apparently non-sexual nature serving as a substitute expression of a really sexual difficulty. So striking is the occurrence of a sexual basis for these varieties of maladjustment, that some writers have asserted that all phobias and the like are based in some sex difficulty. There seems to be no justification for this extreme view of the universal sexuality of maladjustments. Adjustive problems arise from the thwarting and the maldevelopment of all of the motive tendencies of the individual, not solely from the sex motives. The many cases of fears and anxiety that developed during the war gave conclusive evidence of this fact. A reaction against those who overemphasize sex should not blind us, however, from seeing the frequent rôle of sex in relation to repression and maladjustment.

One reason for the prevalence of the sexual causations of maladjustments of the fear type is that sex is perhaps the most frequently thwarted of the strong human drives. Even more important is the fact that sex problems are, without exception, more subject to the operation of repression than are other common difficulties. Children who seek enlightenment on matters relating to sex are usually put off with indefinite

answers, are told that such things are not discussed by nice people, or are even scolded and punished for their very natural interest. As a result of this childhood experience most people have an inhibition against seeking advice on sexual problems even when they are moderately well adjusted in this respect as adults. It must be understood that the sexual tendency itself is not "repressed," as certain psychoanalysts have erroneously asserted. The repression consists in an inhibition of responses to sexual problems, including an inhibition against thinking about such matters and against admitting the nature of the problem, which seriously hinders constructive trial and error when adjustive difficulties in this field are encountered. The repression also acts as an inhibition against securing advice and assistance in connection with sexual difficulties which seriously retards the progress of adjustment and assimilation.

Two cases of sex-adjustment problems will be described. Hamilton (1925) gives the history of a young married woman who was frigid, and who felt repelled and disgusted by the natural advances of her husband. She recognized the undesirability of this condition and strove to overcome it, but was unable to control her feelings. Upon the application of the techniques for discovering the early experiences underlying a repression, a series of incidents that had occurred in early adolescence was unearthed. The young woman had inhibited the recall of these episodes in the same manner as that usually found in cases of phobia. She had lived with an uncle and aunt while attending high school. The uncle frequently came to her room after she had retired and had made numerous sexual advances toward her which she had partially repelled. One night she awoke to find her uncle in bed with her. She screamed and aroused the household, but the uncle had fled. She did not tell of this experience even at the time, but explained the commotion by saying that she must have had a bad dream. The recall of this fear-producing incident was subsequently repressed. Upon the assimilation of this experience, her frigidity, which was a result of a fear response to sexual stimuli, disappeared. Not all cases of this sort are due to definite condition-

ing experiences. In many instances indirect training which causes a youngster to regard sex as nasty, fearful, or disgusting will cause an attitude leading to frigidity, impotence, or other sex-adjustment difficulties.

A transferred fear of basically sexual nature is described by Morgan (1924). A young man complained of a serious stomach disorder, which had been treated without benefit by several physicians. He blamed this trouble on the smoking of cigarettes, although his tobacco indulgence was really very moderate. He described with great anguish his struggles against smoking, but professed that he was unable to overcome the habit. Psychological investigation disclosed that the whole disorder was a transference effect based on worry about masturbation. His father had discovered his auto-erotic habit, had treated him severely because of it, and had suggested that he take up smoking as a means of overcoming the sexual habit. Later, through reading quack literature, he came to believe that his auto-erotic practices would cause extreme mental and physical harm. He broke off the habit, but transferred his sexual anxiety to the smoking. When the real nature of the disorder was revealed to him and when reassurance was given concerning his sexual problems, his symptoms were cured.

SUGGESTED READINGS

Fisher and Hanna, *The Dissatisfied Worker*, chap. 6, gives an excellent account of the rôle of fear in maladjustments. Further studies of phobias, obsessions and compulsions may be found in Bagby, *The Psychology of Personality*, chap. 3 and chap. 14, cases 6, 10, 11, 12; McDougall, *Outline of Abnormal Psychology*, chap. 18; and Fisher, *Introduction to Abnormal Psychology*, chap. 9.

The simplified objective description of repression given by Morgan, *The Psychology of the Unadjusted School Child*, pp. 73–75, will help to clarify the more detailed explanation given in the chapter.

An interesting autobiography of a professor whose life was dominated by a phobia that was eventually overcome by psychological treatment is Leonard, *The Locomotive-God*. Some practical suggestions for overcoming fear are enumerated in Morgan, *Keeping a Sound Mind*, chap. 3.

CHAPTER IX

ADJUSTMENT BY AILMENTS

THE PSYCHONEUROSES

AMONG the most striking of maladjustments are those in which adjustive difficulties give rise to physical symptoms such as aches, pains, muscular spasms, weakness, and even paralyses. Confronted with these phenomena, the unprepared observer is likely to jump to one or the other of two conclusions, neither of which will bear critical investigation. One naïve judgment might be that "mind" has a powerful effect on "body" and that a mental conflict has been somehow converted into the physical symptom. This "psychic" explanation, made in terms of introspective or mentalist concepts which assume mind to be an active entity apart from the rest of the body, has long been a popular one. At the opposite extreme, the casual observer might believe that such disorders could be caused only by physical agents and therefore might ascribe them to germs, toxins, injuries, or other physiological factors. This concept, known as the "somatic" hypothesis, seems to bear the mark of modern materialistic science, but fails to account for some of the observable facts.

Neither the psychic nor the somatic hypothesis is entirely acceptable to the objective psychologist. The psychic approach tends toward the excessive use of analogies and hypothetical inner forces. The somatic explanation falls down before the fact that these disorders can be cured by entirely psychological treatments. The best attack is to regard the disorders which show physical symptoms on the same basis as the other adjustments so far considered. They are reactions of the organism as a whole to various kinds of thwarting. The psychological approach is not the same as the "psychic" one, for it has a due regard for the bodily basis of all forms of behavior. All adjustments involve physiological conditions,

which are chiefly the ordinary modifications of the nervous system that occur when learning takes place. The ailment-adjustments can be explained in the same objective psychological terms that have served for compensations and phobias.

The ailment-adjustments constitute part of a class of disorders which have long received the attention of psychiatrists under the name of the *psychoneuroses*. This term should not be thought of as designating a particular disease, but as indicating a certain range of severity in maladjustments. A psychoneurosis is more serious and more incapacitating than is a mere maladjustment such as a simple compensation, but is milder in degree than a psychosis or insanity. Persons who show psychoneurotic symptoms also show certain similarities in personality traits or typical adjustive habits, which thereby distinguish this class of maladjustment. A considerable variety of behaviors are included under the head of the psychoneuroses, the classification of which offers considerable difficulty. The most conventional grouping of the psychoneuroses divides them into hysteria, psychasthenia, neurasthenia and anxiety neurosis, with several other minor and miscellaneous classes. *Psychasthenia* was formerly widely used to designate the phobias, obsessions and compulsions described in the last chapter. Since these conditions are now more thoroughly understood, the usefulness of this term has declined practically to the zero point. *Neurasthenia* and *anxiety neurosis* are best understood as persistent, nonadjustive emotional states and will be so treated in the next chapter following.

Hysteria has conventionally been applied to a very diversified assortment of maladjustments of rather severe degree. Most prominent of these is "conversion hysteria" which shows symptoms of localized pains, soreness, paralyses and sometimes areas of insensitivity termed anaesthesias. Somewhat psychologically akin to hysteria are certain *motor psychoneuroses* including occupational cramps, and stammering and stuttering. The hysterical conditions differ from other maladjustments only in the end-result, not strikingly in the nature of the processes that produce them. For convenience in describing this class of

ailment-adjustment, some of the older psychiatric terms will be used, but this does not imply that these conditions are "diseases" or that they are basically very different.

LOCALIZED ADJUSTIVE AILMENTS

A Case of Hysteria. Ronald B.'s ailment consisted of a persistent sore throat. Aged twenty-two, intelligent and handsome, he was a student of voice with an eminent private instructor in a large city. Ronald had started singing at the age of seventeen and had been considered as very promising by his teacher in the small town in which he lived at the time. Probably the estimates of his vocal ability were considerably enhanced by his charming personal qualities. Everyone liked Ronald and wished him well. His widowed mother strongly believed that he had a great future in opera or on the concert stage. With his ambitions probably raised considerably beyond the extent of his ability to fulfill them, Ronald went to a large city at the age of twenty-one and secured a part-time position which paid a portion of his expenses. This move involved considerable financial sacrifice on the part of his mother.

The change in teachers and in system of instruction caused an actual decrease in the quality of his singing. Ronald was discouraged, but clung tenaciously to the belief in his ability. At this time a slight cold interrupted his practice. When all other symptoms of the cold had disappeared a peculiar soreness and stiffness of the throat muscles persisted. This did not affect his speaking voice in ordinary conversation, but resulted in excessive effort and in strained tones when he attempted to sing. Ronald's teacher referred him to a throat specialist, who duly painted and sprayed the throat without effect. Another specialist was consulted, who could find nothing physically wrong. A third physician to whom Ronald appealed said that the disorder was "nervous," and recommended exercises and diet to build up his vitality and six weeks' rest for the throat during which period the young man was not to sing. At this

point in the history of the case, Ronald was induced to consult a psychologist at one of the city's universities.

Interpretation. The psychologist made the interpretation of the case which follows. It is obvious that Ronald was strongly motivated by a desire to become a great singer, which was built up by the encouragement and hopes of his teachers, friends and his mother. This involved, for him, the fundamental drives of social approval and of mastery. Unable to progress in singing, Ronald found himself thwarted in the realization of his motives. The admission of failure was impossible to him, therefore all reactions or thoughts relating to failure were repressed. The thwarting in this case might be interpreted as one due to a personal deficiency, or it might be ascribed to a conflict of motivated reactions. The drive to continue his musical studies conflicted with the tendency to give up the struggle and thus avoid a fear-producing failure.

The course of trial and error in any adjustment is guided by the past experiences and fixed adjustment habits of the individual. Ronald's history gave adequate evidence of earlier adjustment tendencies similar to the present difficulty. He had no intimate confidants and never talked about himself. Even close friends seldom knew much of his ideas and aims. This indicates a general tendency to repress and an inhibition against seeking advice, often found in the hysteric. As a child he had been sickly although he is now fairly strong. He had experienced the sympathy and attention that comes with illness. Most significantly, it was discovered that he had a general tendency to react to any problem or conflict by some form of ill health. When, a year before his move to the city, he had been jilted by a girl to whom he felt strongly attached, he developed a hacking cough which disappeared when his social relations were restored by the acquisition of another sweetheart. This young man's mother showed similar tendencies. When Ronald was fifteen he had a great desire to go away to school, in which he was opposed by his mother. The mother at this time had a series of fainting spells which convinced Ronald that he was needed at home. It is not suggested that

Ronald inherited his hysterical traits from his mother, but that he learned them from her.

With such a background, it is not surprising that Ronald should solve his adjustment problem with a physical symptom. The sore throat, which was at first of the ordinary physiological variety, was very effectively tension reducing. It prevented him from working at the vocal lessons in which he felt himself a failure, and gave an excellent and socially acceptable reason for his not singing. The sore throat therefore *suggested* to him a way out of his difficulties. He did not recognize the utility of his symptom, since any overt consideration of his failure was inhibited. The hysterical symptom was hit upon by blind trial and error, and was retained because it solved the adjustment problem. It is perhaps also significant in this case that a tightening of the throat muscles is one of the common physiological factors occurring in strong emotion. The slight constriction of the throat felt in fear aided Ronald in his assumption that the sore throat was a persistent ailment. The hysterical symptom acted as a sort of conduct rationalization. It excused him from admitting failure, and was satisfying to his self-regard, to his mother and to society in general. If he had a throat ailment, of course he could not sing, and no one would accuse him of being a failure or a quitter.

The treatment of the case necessarily involved Ronald's readjustment in regard to the main problem. If the tension-reducing value of the sore throat had merely been eliminated by convincing him that it was a defense, only superficial progress would have been made. A complete reconsideration of his vocational aims and satisfactions was essential. Under the psychologist's guidance he came to admit that music offered him no great opportunities and that his talent in this field was limited. Fortunately, the part-time work in which he was engaged interested him and he was succeeding well with it. His life purposes became redirected into the business field and he found adequate satisfaction there. When, some time later, he returned to singing as an avocation, there was no trace of the throat contracture.

Other Cases of Hysteria. The hysterical mechanism is not a rare one but is about as common as any other form of adjustment. In mild forms, it plays a part in the adjustive history of a large proportion of the population. The "nine o'clock headache" is a phemomenon frequently encountered among school children. The child escapes school by being ill when it is time to go, only to recover with surprising rapidity as soon as the danger of being compelled to attend is past. A maladjusting school situation, often not overtly recognized by the child himself, is at the bottom of such reactions. Adults often employ petty illnesses to get out of situations that they do not like. The symptoms, such as headaches or gastric distress, arise at first as physiological results of emotion, and then are enlarged upon because they gain sympathy or because they are of utility. The common sayings that a distasteful task "gives you a pain" or "makes you sick" are not entirely figures of speech. Hysterical mechanisms often operate in conjunction with real physical disorders. This is illustrated by a case of a suggestible young woman who was recuperating from an abdominal operation. She was beginning to feel fine and to go out of doors when her physician injudiciously remarked that he did not expect her to be out of bed yet. The young woman at once developed pains and weakness, with the result that her recovery was considerably delayed.

The wide variety of localized physical symptoms that are employed as adjustive devices can be understood only by the examination of a large number of cases. A few of the mechanisms that have been described in cases of hysteria will be enumerated here. The development of these conditions is very much like that cited in the case of Ronald, but for the complete history, the original sources should be consulted.

A young girl avoided going to social affairs by means of very timely "sick headaches." An unfortunate situation had arisen whereby she was snubbed and subjected to humiliation by the other children of the neighborhood, this being especially evident at parties. As a party approached, the girl's emotional tension increased and she became ill, thereby successfully avoiding the necessity of appearing in company. (Bagby, 1928.)

An unattractive young woman who had few contacts with men began to insist that a man was annoying her. She received letters from him which she showed, the letters being at first amative and later threatening. Upon the receipt of one threatening letter she had an attack of uncontrollable screaming, after which she discovered that her left arm was numb and that she could not move it. The lover proved to be imaginary and the girl confessed that she had written the letters herself, using her left hand. She was of a generally disorganized personality make-up, and this incident had been sufficient to suggest the symptom. She symbolically "disowns" the offending arm, thereby assisting the solution of a conflict. The favorable attention that her unusual ailment brought was of course also a factor in causing the maintenance of the paralysis. (Pressey and Pressey, 1926.)

Anaesthesias or insensitivities have been reported as hysterical symptoms. Janet (1907) tells of a factory worker who was suddenly lashed in the face by a greasy rag that had caught in the machinery. Although physically uninjured, he became blind and remained so for some years. It is believed that the shock of the minor accident suggested the disability, which aided him in some adjustment problem. Often relief from the necessity of having to work is sufficient to motivate the acquisition of such a symptom. A large proportion of persons who make claims for injuries resulting from motor and industrial accidents are hysterically rather than physically incapacitated. Anaesthesias were formerly among the most frequently reported of hysterical symptoms, but are now said to be rare. These adjustments follow trends of fashion, since the symptoms of one case are often suggested by those of another of which the patient has heard. Even the physician may suggest symptoms to his patient by looking for them.

The war of 1914–18 disclosed many cases of hysteria and aroused more interest in this subject than had previously existed. One war case will be described. A young soldier of average intelligence was lying in his bunk just before being sent to front-line duty. He felt a twinge of pain in his right arm,

which had been broken twice, the last time rather recently. The arm was discovered to be numb. (The actual sensation is a common one, arising from a deficiency in circulation due to pressure.) He concluded that his arm was paralyzed, gave up control of it and suffered a contracture of the hand. The ailment stubbornly resisted treatment until after the signing of the armistice, when the man recovered rapidly. (Hollingworth, 1930.) These war cases were frequently misnamed "shell-shock," from the fact that they first occurred in men who had been under fire for a long time. The adjustive nature of this case is obvious. A strong conflict develops between avoidance responses aroused by danger, and the fear of social disapproval for being a coward. A chance cramp suggests the solution, which is perpetuated because of its utility as a tension reducer.

A number of other quite serious disorders of behavior have conventionally been classified as hysterical. These will be enumerated and briefly described but an adequate interpretation will not be attempted, both because too little is known about them, and because the discussion would lead too far into the field of abnormal psychology. *Hysterical seizures* are episodes that superficially resemble epilepsy. The individual screams, falls and becomes unconscious. The hysterical fit is not far removed from the pains and paralyses so far considered, for it is an ailment that serves adjustive purposes, usually by gaining sympathy or by frightening parents or spouse into compliance with the patient's wishes. Unlike true epilepsy, hysteria of this type can be cured by psychological forms of treatment. More obscure, but still obviously adjustive are *fugues*, in which condition the patient forgets his identity and his experiences for a time and runs away from his usual locale, often "coming to himself" in a distant city with no knowledge of how he got there. The forgetting of the fugue period seems to be an extreme instance of repression, the traveling a form of withdrawal from a trying situation. When a case of fugue is properly investigated it usually seems determined by some crisis that an individual of inadequate adjustive habits is unable to face. In

somnambulisms, the patient goes into a dream-like trance and in this condition often acts out some event that has an intense personal emotional significance. From fugues and somnambulisms it is only a step to *multiple personality*. This rare disorder, which has been so ill described in fiction that it is grossly misunderstood by most people, involves the functioning of the individual according to two or more patterns of personality. These personality states often show reciprocal amnesia, that is, one state has no memory of experiences that occurred in the other. Multiple personality is the result of a long process of habit formation, in which the individual is unable to reconcile or to select between two opposing sets of response tendencies. Some crisis precipitates the total abandonment of one set of habits and the repression of the knowledge associated with them, in favor of the alternative set. Multiple personality is a very complicated psychological phenomenon, but probably it can be explained in terms of habit and adjustment, without any far-fetched psychic hypotheses.

Hysteria and Malingering. When assured that hysterical symptoms are not due to physiological illness in the ordinary sense of the term, the layman often ascribes them to deliberate and mischievous invention. If a wife has a gastric disturbance of an hysterical nature her husband's first assumption is of organic disease. If it is now proved that the condition has no organic basis and that, furthermore, it lets her off from housework that she detests, the husband's next belief is that she feigned the symptoms in order to deceive him! Is the hysterical patient deliberately malingering to gain his ends? The answer is principally in the negative. There is every reason to believe that an hysterical headache hurts as much as any other kind and that hysterical paralyses defy any ordinary volitional attempt to move the affected member. In the descriptive sense of the term, the patient is quite unconscious of the purpose and origin of his symptoms.

An illustration adapted from Clendening (1927) is helpful. Let us suppose that an inexperienced actor walks upon the stage to say his lines. He faces the audience and is struck speechless.

It is to be noted that he is suffering from a purely physical disability: he cannot move the muscles of his larynx. Two explanations might be offered, analogous to those held by the husband just mentioned. One is that the actor has an organic disease of the larynx; the other is that he refuses to speak out of pure devilment. Neither is true, for the larynx will soon be working properly, and no one is more anxious than the unfortunate actor that he should perform his part well. He is the last person who could explain his disability for he is undergoing a psychological process into which he has no understanding or insight. The plight of any hysteric is very similar.

The foregoing account does not, of course, deny that malingering can take place. There are some people who lie, and assert that they have a pain, a weakness or some other disability that they know very well to be non-existent. Lying to gain an end or to escape the consequences of an action is itself an adjustment mechanism and is regarded in this way rather than moralistically by psychologists. The boundary between hysteria and malingering is an indefinite one and no exact statement can be made as to where one ends and the other begins. The deliberate liar is at one end of a continuum. In the middle are cases in which the individual partially convinces himself of the reality of his ailment, or has a slight insight into his condition. At the other extreme is found the true hysteric who in the common sense of the words is entirely sincere and honest in believing in his ailment. Hysterical symptoms have utility to the patient and get him out of adjustive difficulties. The young man avoided singing by means of his sore throat; the soldier escaped personal injury because of his paralyzed arm. These facts do not, however, necessarily point to malingering but to adjustment. All adjustive reactions are useful to the individual in reducing his drive-tensions, and hysterical conditions merely conform to this general principle.

The Development of Hysteria. An hysterical reaction seldom appears for the first time in an adult, but almost always has a long history of gradual development in childhood. The most important factor in the genesis of hysteria and of other psycho-

neuroses is not the thwarting or conflict that precipitates the present crisis, but is the nature of the past experiences of the individual which predispose him to make this kind of adjustment. The underlying causes of hysteria are not simple, and it is probable that the same end-result may be brought about by any one of several different circumstances. In one individual one set of habits may lead in the end to hysteria, in another person a quite different series of experiences may be to blame. In spite of this complexity, a few of the predisposing factors are sufficiently evident to justify their description.

One obvious antecedent factor in many cases of hysteria is a *satisfactory experience with illness*. Often some genuine illness of a trivial nature, occurring at a time when an adjustive difficulty is present, acts as a solution and is therefore of tension-reducing value. By the ordinary process of adjustive learning, the individual tends to resort to illness when a similar thwarting affects him in the future. If parents make a child's illness too pleasant an occasion by giving him special exemptions and privileges without corresponding deprivations, the child will be predisposed to at least the milder and more common hysterical tendencies of being ill when in need of special consideration. Since physically impaired persons are treated with special kindness and sympathy, the urge to secure this status is a strong one unless it is counteracted by other factors. In some cases the initial "real" illness which suggests the hysterical mechanism consists only of the physiological effects of strong emotion. If emotion is aroused in an adjustment situation, the digestive processes are inhibited and malaise and headache are likely to result. If these symptoms are effective in producing an adjustment, they will be used again when trouble presents itself. The tendency to react to thwarting by some form of illness is the result of the selection of this form of defense as the most tension-reducing solution discovered by the trial and error processes of the individual.

Three observations that have been made very frequently concerning the personalities of hysterics are that they are *egocentric in motivation* and that they tend to be more *suggestible*

than other people and that they *lack integration* or unity of behavior. These unfortunate personal habits seem largely due to the same set of causes, to an excess of love-conditioning or "spoiling" and to generally inadequate training in childhood. It has long been noted that hysterics behave like spoiled children in that they will do anything to gain their selfish ends. In childhood this tendency is built up by overprotection, by excessive dependence on parents and by a lack of training in independent problem solving. If the child is always given his own way, this leads to willfullness and a lack of voluntary control. The persistent unethical motivation of the hysteric may be ascribed to a well-learned expectation that people will give in to him and that he can have his way in spite of the needs and desires of others.

A profusion of love-conditioning in childhood also leads to an overvaluation of social approval and too great an emphasis on the importance of appearances. The hysterical response is an attempt to convince the world of the justifiable nature of an action that is dictated by egocentric motivation. The soldier with the paralyzed arm successfully meets the need for retaining public approval while saving his own skin. The suggestibility of the hysteric is the tendency to react too strongly to an inadequate or partial cue. The suggestible person accepts what he is told or whatever momentarily occurs to him without adequate critical judgment. The external orientation of the hysteric favors suggestibility, for in reacting to the approval of others he is less likely to develop coherent and reasoned patterns of behavior than is the more reflectively inclined person.

Generally inadequate habit training may, in other individuals, result in approximately the same condition. Vacillating or conflicting control on the part of parents, especially a tendency to approve or ignore a form of behavior at one time and to punish the same act at another time, renders the formation of a unified system of values difficult and predisposes the child toward a divided form of adjustment. Of surprisingly frequent occurrence in the childhood histories of hysterics is some strong conflict of loyalties, as when the individual is torn between

quarreling or separated parents or when he is conditioned both to love and to fear the same person. In short, the hysteric is one who has been trained to act in one manner while feeling and thinking in a way opposite to his overt response. The effect of this training on the development of rational and desirable adjustive habits is easily seen. The lack of integration of behavior shown by hysterics, and indeed by all maladjusted persons, will be more thoroughly explored in a later chapter.

The Treatment of Hysterical Reactions. In the course of years of experience with hysterical disorders, psychiatrists and psychologists have evolved a number of ways of dealing with them which vary somewhat in their fundamental value but all of which are more or less effective in eliminating the symptoms. A treatment which frequently brings quick results is that of *rendering the symptoms ineffective as tension reducers.* In the war hysterias, it was found that repeated painful treatment often removed the hysterical manifestation. The patient with a paralyzed arm would be given electric shocks, with the solemn assurance that these would cure the condition, and that the treatment would be continued with more intense shocks every day until the paralysis disappeared. After a number of unpleasant treatments, the fear of returning to the front became less than the fear of the electric shocks, and the ailment-adjustment would be abandoned, often very abruptly. This mode of treatment was, however, not very permanently effective. Having been relieved of one symptom, the patient would often develop another one at once, or was at least very likely to show further hysterical traits when placed in the zone of fighting. The punishment technique was superficial in that it removed the symptom only, without any attention to the patient's adjustment problems or to his habitual modes of reacting to them.

With children, the procedure of rendering the symptoms ineffective is valuable if it is applied so as to prevent the development of habits of hysterical adjustment. A period of illness should not be made too pleasant for a child, and he should understand that some of his usual privileges will be denied while

he is ill and restored when he recovers. A positive emphasis on good health is an even more desirable preventative. If a child complains of an ailment at school time it is a good plan to put him to bed for the entire day. This cannot do any harm to his physical condition if the illness is a real one, and prevents the ailment from being used for adjustive purposes. The habit of regarding illness as a misfortune to be overcome as quickly as possible rather than as a pleasant escape can be cultivated by procedures such as these.

Another rather superficial method of treating hysterical symptoms is by *suggestion*. The hysteric, in keeping with his excessive emphasis on social approval, is usually very suggestible in that he readily believes and follows anything that is told him in a tone of authority or of affection. McDougall reports one of the most remarkable cases of the use of suggestion in connection with a soldier who had a "stocking anaesthesia" of hysterical nature, having no skin sensation in his legs. McDougall explained to the patient that the anaesthesia would recede day by day and that, when it was gone, he would have full use of his legs. He ostentatiously mapped the upper limit of the anaesthesia on both legs every morning, and in this way drew off the anaesthesia like a pair of stockings, two or three inches a day. A patient who would suggest to himself a paralysis or an anaesthesia as a solution of his adjustment problem is also sufficiently gullible to be cured by such a process. Every physician uses suggestion in the treatment of the common hysterias that come to him by giving pills, often "placebos" of no medicinal action, with the grave assurance that the patient will entirely recover after taking them. Since the process of suggestion treats only the symptom, leaving the underlying adjustment problems unsolved, it is not a really adequate cure.

A somewhat more effective means of treatment of the war hysterias was found in *strict discipline and routine living*. The hysterical patients were made to understand that they had work to do and that they would not be pampered. Discipline was made more strict for them than for other invalided soldiers. They were compelled to follow an exact routine of sleeping,

eating and exercise, and to devote definite periods of time to the attempted use of whatever function was affected, in a "curative workshop." Little attention was paid to their complaints or demands for sympathy. This procedure not only rendered their symptoms less effective, but also aided them to adjust in an integrated manner to a simple mode of living. The regular routine of work and rest and the abandonment of attention and coddling helped in a fundamental way to overcome the deficiencies of their early training. A controlled and simple regimen at home or at camp, strict and without sentimentality though not entirely without sympathy, has been shown helpful to children of hysterical tendencies. Similar procedures are difficult to apply to adults in civilian life, but "health camps" which have proved helpful in the treatment of hysterical conditions use the same principles.

Attention has already been called to the effect of a *change in motivation* on hysterical symptoms. The soldier's paralysis was quickly cured after the signing of the armistice which made the defense no longer necessary. As in this case, the situational change sometimes comes about in the natural course of events when the patient is by chance removed from contact with the problem to which he is adjusting. There are a few striking exceptions to this generalization. In some cases the hysterical symptoms remain long after their original utility has ceased to exist. These secondary adjustments are termed "consistency reactions." The patient cannot adjust to the fact that his ailment is psychological, which would leave him open to accusations of malingering. He retains the defenses which were assumed against a past problem, but which now protect him only against an admission that the disorder was not organic. There are still many patients in veterans' hospitals whose disabilities are persisting war hysterias, retained in part as consistency reactions and in part because they are still of some utility in permitting hospitalization and continued public support.

The fundamental treatment of hysteria by psychological methods is not easy and is frequently a very prolonged procedure. It involves the *readjustment* of the individual to his

present difficulties and, what is harder to achieve, the training of the patient in *new habits of adjustment* which will function when he confronts other problems. The hysterical symptom will disappear when the individual gains insight into its origin, and discovers some other more effective adjustment with which to replace it. He is assisted in re-evaluating his motives and in returning to a constructive trial and error process directed toward their satisfaction. The establishment of new adjustive habits is especially difficult and time consuming, for an entire life-time of unfortunate learning has to be broken down and replaced. Because of the great labor involved in the complete reformation of the individual's personal habits, the prevention of hysteria in childhood is a more profitable method than its treatment in adults.

Hysteria and Miracles. Intelligent persons have long been puzzled by the apparent cures of physical disorders, achieved by means that seem to be outside the bounds of rational explanation. The cures that are claimed by the makers of some patent medicines and by the proponents of various medical quackeries seem incredible. The miraculous healings that occur at religious shrines or under the ministrations of religious cults or faith healers are equally incomprehensible. Critical observers tend either to deny that such cures exist or else to ascribe them to the operation of supernatural agencies. The concept of the ailment-adjustment explains them fully. Hysterical symptoms may include lameness, blindness, paralyses and all sorts of aches and pains. Since it is often difficult to distinguish between a physically determined disability and one that is of psychological causation, many of these are incorrectly diagnosed as of organic nature. The miraculous cures are cures of hysterical symptoms. An act of faith, supported by the reassurances and rituals of either a medical fallacy or a religious observance, may remove the hysterical ailment by suggestion. It has been observed at shrines that the cure of one case is often followed by a number of other recoveries on the part of the spectators. When an adjustive ailment is a consistency reaction the real utility of which is past, the faith cure may offer an attractive

means of getting rid of it without loss of self-esteem. Only in these latter cases is the miraculous cure likely to be permanent. When the recovery is based only on belief and suggestion, only temporary benefit is likely to be realized.

Some groups that combine religious beliefs with the healing of ailments, notably "Christian Science," operate on principles somewhat more fundamental than mere suggestion. There is a great emphasis on a routine of reading and study and on a unified outlook on life. Although differences of opinion may exist as to the value and truth of the doctrines concerned, this is a religious and philosophical problem and not one of science. From the psychological point of view, the individual's integration seems to be improved by the rigorous practice of some faith. He may genuinely effect a readjustment of his personal problems on a religious basis and thereby eliminate the need for the ailment-adjustment.

While various systems of faith-cure are somewhat effective in treating psychological or adjustive disorders, there is no very good evidence that they have an appreciable influence on physical diseases. The great harm done by all faith or religious cures is that they almost universally claim to cure bodily disease. Not understanding the difference between an adjustive pain and one due, say, to cancer, a person may depend futilely on magical methods until it is too late for medical aid.

MOTOR PSYCHONEUROSES

Closely allied to hysteria, although they have usually been considered separately from it, are a number of disorders of motor function that affect a limited muscle group or which appear only in relation to certain tasks and situations. These may be brought together as *motor psychoneuroses*, although, of course, many general hysterical reactions also show motor symptoms. The motor psychoneuroses are characterized by cramps, localized muscular weaknesses, tremors or specialized inhibition of movement. Of special interest are the occupational psychoneuroses, and stammering and stuttering.

Occupational Psychoneuroses. Occupational cramps and tremors have been noted in most of the common occupations that involve finely co-ordinated muscular movement. A recent German writer distinguished no fewer than thirty-four varieties of occupational cramps involving the upper extremities alone, including writers' cramp, telegraphers' cramp, violinists' cramp, milkers' cramp, cigarette makers' cramp and many others. Probably no manual occupation exists that does not have its own peculiar symptom. Telegraphers' cramp, which has been investigated extensively in England, may be cited as a typical example. The onset of the cramp is usually gradual, although some cases occur suddenly. At first the individual notes difficulty in manipulating the telegraph key; it "sticks" and he cannot release the pressure of his hand in time to give the next signal. The muscles of the hand and arm become tense, movement is often painful, and finally a contracture of the hand appears that renders any sending impossible. The psychoneurotic cramp is to be distinguished from the ordinary cramp of fatigue. In the latter case rest entirely restores the function, while a psychoneurotic symptom is not affected by rest and often appears at the moment the individual first grasps the key before fatigue could possibly be operative.

Probably the commonest disorder of this type is writers' cramp which consists in the development of muscular contractures, spasms or inco-ordination when an attempt is made to write. It usually occurs among people to whom writing is an occupational essential, but has been discovered in foremen, gardeners and others who suffer no economic disability because of it. It is probable that many unreported cases of the latter class exist, as a man is more likely to consult a physician if his vocational competence is affected.

The psychoneurotic nature of occupational cramps is clearly shown by a number of observations concerning them. The disorder usually appears only in the actual occupational situation, not being evident when the same muscle groups are tested with laboratory apparatus which measures motor skill. Culpin (1931) mentions a telegrapher who could send perfectly when

he knew that his key was connected to a testing machine, but who developed an immediate cramp when placed at a main line key. Such observations as these rule out the possibility that the cramp is caused by an organic condition of the nervous system. Persons affected with writers' cramp often show irrational variations that are typical of ailment-adjustments. One person cannot write his name, another has trouble only with certain letters, another may be unable to write figures, while in one case a man could write when holding the paper against the wall but developed cramps when he tried to write at a desk. Most occupational cramps are intensified if the individual is closely observed. Such instances suggest the condition of the stammerer who can speak perfectly when alone but who cannot utter a sound when people are listening. In fact, the victim of telegraphers' or writers' cramp has sometimes been described as having a "stammering hand." Many persons with occupational cramps show other general psychoneurotic symptoms. In a study of 41 cases of telegraphers' cramp, Culpin found other signs of adjustive ailment in 31, which was 75.6 per cent of the group. Nine of the remaining ten showed only the occupational disorder, while one case was due to a definite organic cause.

The interpretation of the occupational psychoneuroses is essentially the same as that of hysteria. The individual affected has, at the outset, some deep dissatisfaction with his work, or has associated it with some intense personal emotional problem. The condition occurs more frequently when the worker is not free to quit as when he is in the army, when giving up his work would mean a loss of a pension or when he has a chance of receiving compensation for his disability. Some transient fatigue may suggest the symptom to the patient, or he may copy it from another affected person, such behaviors being psychologically "contagious." As in hysteria, the symptom is adopted and enlarged upon because it provides a solution for an adjustive problem. In some cases the individual has a need for securing the status of a physically impaired person, and may develop symptom after symptom as his circumstances change. Thus

some men who were transferred from the telegraph to the telephone service because of cramp developed laryngitis which barred them from the second occupation also. Only a general readjustment of the patient's personal and vocational problems effects a permanent cure of a persistent occupational psychoneurosis.

Stammering and Stuttering. These terms are often loosely or interchangeably used, but properly stammering refers to an inhibition of speech in which no sound can be uttered, while stuttering means the involuntary repetition of a sound or syllable with a lack of the ability to quit it and go on to the next. The two classes of speech defect are very common and are closely allied, often being encountered in the same individual. It is estimated that from one to two per cent of school children suffer from these disturbances. Stammering and stuttering are known to be much more frequent among boys than among girls. The difficulty usually starts in early childhood, one estimate being that eighty per cent of stuttering begins before the age of six years. A fair number of persons with this class of speech defect recover spontaneously, but no methods have been discovered that will positively cure a large majority of cases.

Theories that stuttering and stammering are the result of various organic and physiological conditions have long been held and are the subject of some research even to the present time. These studies, on the whole, have been inconclusive either because of failure to find any positive results, or because of lack of adequate controls. It has been asserted many times that shallow breathing is the cause of stammering, but two recent studies have found no substantial evidence of this. Fletcher (1928) found no consistent differences between the breathing of those affected with stammering and those free from it. Trumper (1928) concluded that breathing was important, yet found "shallow inadequate breathing" in only one third of his cases, and had no comparative data on normal people. While he is stammering the affected individual may breathe inadequately, but this is as likely to be the result of the condition as to be its cause. The same error of mistaking

result for cause has been made in studies of blood pressure, pulse and metabolism. The stutterer shows changes in these functions as a result of an emotional reaction to his disability, but the physiological states probably have little or nothing to do with causing the speech defect. The assertion that changing a left-handed child to right-handedness causes stammering or stuttering receives little support from the fact that 90 to 95 per cent of children so changed are free from these disorders.

Some of the best-known characteristics of stuttering and stammering lead to the conclusion that they are caused by psychological processes. That most stammerers can speak well when alone but not when observed, that they can sing words that they cannot say, that the disorder disappears temporarily when they are distracted from paying attention to it, all suggest that the problems involved are those of adjustment and habit formation. Several hypotheses have been proposed. Freud maintains that the words or sounds that cannot be pronounced are related to painful incidents or shame-provoking experiences of childhood the memory of which has been repressed. Dunlap, who is far from being a Freudian, has suggested a rather similar theory. Noting that the sounds that are hardest for stammerers to say are the same as those with which certain obscene words often used by children begin, Dunlap believes that stammering results from a "vocabulary taboo." The child fears that the obscene word will slip out in the presence of his parents, hence inhibits it strongly. Robust children with vulgar backgrounds seldom stammer, while well-brought-up little boys do, having the greater incentive for inhibition. That girls seldom stammer is ascribed to the fact that proper little girls do not use these obscene terms as much as do boys, even among themselves. Another theory of stuttering, proposed by Adler, is that it constitutes a withdrawing mechanism due to an attitude of inferiority. The stutterer, feeling inferior and ill at ease, hesitates to speak lest he be repulsed, hence the inhibition develops. Adler also suggests that the stutterer uses his disability as an excuse for his lack of accomplishment and privately

blames all failures on this disability which thus acquires adjustive value of a rationalizing type.

The theory of stuttering that holds most in common with the objective psychological viewpoint is that of Fletcher (1928), which holds that the condition is not a true speech defect but is a personality maladjustment. The stutterer suffers his greatest difficulty when speaking as a social communication. His trouble is therefore a subtle fear of social contact, an emotional response to the presence of his auditors. Stuttering begins early in childhood before the speech habits have become automatic. At this stage when the co-ordinations are imperfect the disrupting effect of emotion is most likely to have a serious effect, for emotion destroys the precision of any movements except those that are very highly learned. In those children whose unfortunate emotional conditionings occur when they are speaking, stuttering will result. When the fear is experienced in other situations, various other maladjustments may be formed, as has been described previously. The circumstances, then, determine which individuals will develop the particular maladjustment of stuttering. No single experience is sufficient, except in rare cases, but cumulative conditioning over a period of time will fix the habit of stuttering. Later, stuttering becomes a circular nonadjustive reaction. Fear causes stuttering, the apprehension that he will stutter when he talks causes fear, and the victim is bound in a vicious circle that is hard to terminate.

Some success in curing stammering and stuttering has been achieved, chiefly through two methods. One technique is to give the stutterer something to think about other than his method of talking. Systems which compel him to pay attention to how he holds his tongue, how he breathes, and the like, are probably of greatest value as distractions. By thinking of these things as he talks, the individual is prevented from attending closely to his deficiencies, hence he talks with greater ease. The other method for the cure of stuttering is the development of self-confidence, which is good adjustment to social relationships. Public speaking, reciting passages learned by

rote and similar methods give both practice and confidence. General personal readjustment by psychological techniques is often valuable. Since stuttering is a cumulative habit it is often harder to cure in adults than when in an incipient stage in childhood. Pre-school children who are beginning to stutter should be relieved of emotional tension and of attitudes of inferiority and should be put in situations that make it easy for them to talk. Anything that calls the child's attention to his stuttering is likely to be harmful rather than of benefit. It should be understood that there exist other kinds of speech defects, some due to organic conditions and some to inadequate habit formations, that are distinct from the emotional types described here and which necessitate different treatments.

SUGGESTED READINGS

A concise statement of the various theories of hysteria is given by Pillsbury, *An Elementary Psychology of the Abnormal*, chaps. 3–8. A more detailed account, including an objective psychological theory, may be found in Hollingworth, *Abnormal Psychology*, chaps. 10–18. Hollingworth's own theories are also stated in his *Psychology of Functional Neuroses*, chaps. 2–5. Additional material descriptive of hysteria, including the more severe manifestations of it, will be found in Morgan, *The Psychology of Abnormal People*, chap. 12; Bagby, *The Psychology of Personality*, chaps. 11 and 13; and Fisher, *Introduction to Abnormal Psychology*, chap. 10.

The best reference on the occupational neuroses is Culpin, *Recent Advances in the Study of the Psychoneuroses*, chaps. 7 and 8. A brief summary also appears in Viteles, *Industrial Psychology*, chap. 26.

An admirable summary of the facts concerning stuttering and stammering is given by Hollingworth, *Abnormal Psychology*, chap. 20. More complete references are Fletcher, *The Problem of Stuttering*, and Twitmyer and Nathanson, *The Correction of Defective Speech*. Further bibliographies pertaining to this large field may be found in the last two books named.

CHAPTER X

PERSISTENT NONADJUSTIVE REACTIONS

ADJUSTMENT AND NONADJUSTMENT

Responses to Baffling Difficulties. All of the varieties of human behavior so far considered have some degree of adjustive value for the individual. While maladjustments are both socially and personally less adequate than are more normal and successful direct attacks on life problems, they still serve the function of reducing emotional tensions. Compensation and phantasy are very directly satisfying to motives, and even withdrawing, repression and hysterical reactions assist the individual to compromise with his environment. If, for some reason, a person fails to adjust by one of the more nearly normal mechanisms such as compensation or rationalization, he is likely to try some of the more aberrant forms of behavior, such as hysteria. In some instances, however, an individual confronted with an insistent and baffling personal problem does not make any adjustment, but remains in an unadjusted state. The mildest form of this nonadjustive type of response is found in the extremely common phenomenon of worry. The most severe nonadjustive reactions are complete breakdowns of the adjustive process in which the individual seems entirely unable to deal with his life problems. Nonadjustive states of all degrees of severity may be found between the two extremes. Because of their frequency, these types of behavior are as important to the psychology of adjustment as are any of the really tension-reducing mechanisms.

When a tension is aroused by an unsatisfied motive or by an emotional state, the most usual response is the use of some more or less adequate device for tension reduction. When this does not occur it is because the individual is unable, in the course of trial and error, to discover any means of adjustment. Such persons remain in a continued state of tension and show symp-

toms that are usually described as "nervousness," "breakdown," worry or anxiety. These states are the end-results of a psychologically simple nonadjustive pattern that may be diagramed as follows:

Motive — Thwarting — Trial and Error — Lack of Any Specific Reducer — Unreduced Tension — Diffused Activity.

Varieties of Nonadjustive Response. Since an unreduced tension must give rise to some kind of response, the nonadjustive condition is characterized by a number of active behavior symptoms, all of which usually occur at the same time, but with varying degrees of prominence in various persons. The most constant result of unreduced emotional tension is a *persistent visceral state*, in which the vital processes of the individual are impaired through the action of the sympathetic division of the autonomic nervous system, which acts in all conditions involving emotion. A second characteristic of nonadjustment is *diffused motor activity* and a heightened readiness for random muscular responses. The tense person chews his nails, drums on the table, makes repeated restless movements. He overreacts to chance stimuli, starting sharply at a slight noise. This is, of course, the behavior typical of ordinary nervousness. The third principal symptom of a nonadjustive state is a condition of *worry or anxiety*, which is a form of fear response. It may vary in scope from simple worry about a fairly specific problem to a broadly transferred anxiety which concerns the entire status of the individual and all of the adjustive situations that he encounters.

The persistent nonadjustive emotional responses have conventionally been included in the class of the psychoneuroses, along with hysteria and the obsession-compulsion states that have already been met. The third type of psychoneurosis, according to the most common classification used by psychiatrists and textbook writers, has been called *neurasthenia*. This term was originated by Beard in 1869 to designate a class of ailment that he believed to be due to "the stress and strain of modern life." There is every reason to believe, however, that neuras-

thenia has existed as long as has mankind. Its classical symptom picture includes vague aches and pains, digestive disturbances, lassitude, a pessimistic attitude and sometimes diffused fear and anxiety. This list of complaints almost exactly corresponds to the previous description of a nonadjustive response to a baffling difficulty.

The value of "neurasthenia" as a diagnostic classification has been the subject of much controversy. It is recognized by many that the term has been made to cover a multitude of conditions that are not exactly alike in symptoms or causes. Culpin (1931) speaks of the "dumping ground of neurasthenia," upon which are piled all otherwise unaccountable adjustive difficulties of psychoneurotic nature. Because of the dissatisfaction with neurasthenia as being too broad a class, various attempts have been made to subdivide it. One of the first of these divisions was proposed in 1894 by Freud. He suggested limiting the term "neurasthenia" to a definite organic condition supposedly caused by sexual excesses, applying "anxiety neurosis" to a state of frustrated sexuality and "anxiety hysteria" to a condition of fear of sex desire. These proposals of Freud have resulted chiefly in bringing into disrepute the use of neurasthenia as a designation for psychological disorders. Psychopathologists who are not Freudians find little support for the assumption of a universally sexual causation of persistent nonadjustive reactions, although sex problems are truly one of the several most important causes.

One of the more recent classifications of nonadjustive psychoneurotic states is that of Adolf Meyer, who describes four principal patterns of response that come under this head. *General nervousness* is applied to conditions characterized chiefly by emotional instability, sensitivity and minor tremors of movements and speech. *Neurasthenia* or "nervous exhaustion" is retained to designate states of fatigue, weakness, aches and pains and insomnia. *Hypochondria* is used to describe adjustive ailments in which preoccupation about health, accompanied by an exaggeration of minor physical disorders, is the preponderant symptom. *Anxiety states* is the term applied by Meyer to non-

adjustive conditions when accompanied by vague fear, a sense of impending doom and other evidences of irrational worry. If these conditions are to be separated and classified at all, Dr. Meyer's categories seem to be the most satisfactory yet proposed.

The best solution of the problem of the classification of these psychoneuroses is, however, not to classify them at all. Cases of "pure" neurasthenia or anxiety state are rare indeed, but combinations of the symptoms described for these conditions are extremely common. Perhaps the original blanket term of *neurasthenia* applied indiscriminately to all such ailments was best after all, for these conditions are really more alike than distinguishable. The classifiers have done a poor service for psychology in trying to reduce a general human characteristic to "types of diseases." The core phenomenon of the generalized psychoneuroses is a persistent nonadjustive emotional reaction to baffling personal difficulties. If the visceral symptoms are more evident in one case, the anxiety in another and "nervousness" in a third, these are incidental rather than fundamental variations. In the discussion that follows, the term neurasthenia will occasionally be used rather broadly as synonymous with "generalized nonadjustive ailment" because of the need for a brief term by which to designate this condition.

GENERALIZED NONADJUSTIVE AILMENTS

A Case Study. Helen T. was a twenty-year-old college student with an excellent academic record. In her senior year she developed an illness with an imposing array of symptoms which made her feel for a time that she could not continue in college. Helen had digestive pains after every meal, was constipated, and underweight. She suffered from insomnia to the extent that she was seldom able to sleep before two or three in the morning, but once she got to sleep she was quite likely to sleep until noon, missing her morning classes. Throughout the rest of the day she felt dull and tired; any little exertion fatigued her excessively. In addition to these physical symptoms, Helen

was melancholy, avoided the company of her friends, and was very irregular in her habits. She ate at odd hours or not at all, avoided all activity and neglected her work. The case looked like a generally run-down physical condition, as indeed it was, but it was also a very typical picture of a nonadjustive emotional reaction of the neurasthenic type.

Helen was the only child of parents who were both professional people. Her childhood had been somewhat spoiled and pampered, but she had made remarkable school progress due partly to her good ability and partly to the bookish emphasis of her home which placed a great premium on intellectual accomplishment. Helen's childhood play was largely solitary; and she avoided active muscular games, which resulted in a self-centered and nonsocial attitude. In adolescence she found herself awkward, not very attractive, and distinctly lacking in social graces. She developed strong feelings of social inferiority, which were partly compensated by her superiority at school. A severe illness when she was fifteen years old kept her in bed most of the time for five months, which undoubtedly increased her withdrawing tendencies. Helen was deeply religious. Her one continuous social activity had been in church and Y.W.C.A. affairs, and this interest had been continued in college. Her attitude was very moral, especially in regard to sex.

Six months before the onset of the ailment, Helen had fallen violently in love with a man ten years her senior, whom she had met in her church work. Her affections were reciprocated for a while and there was sufficient demonstrativeness that, while the affair did not really go very far, Helen experienced a severe moral conflict. Her attitude was alternately ardent and yielding, and then extremely moralistic. The man, who was a very matter-of-fact person, tired of her vacillation between amativeness and preaching, and broke off the relationship. Since Helen had few other social outlets she reacted very seriously to the break. This love affair had been an adjustment to her severely thwarted sexual and social motives alike and its end was a catastrophe to her.

At about the same time two other adjustment problems were

developing. Through discussion in student groups and through her studies in some science courses, Helen's immature religious conceptions were becoming weakened, and as yet she had no philosophy of life with which to replace them. Also, her graduation approached and, having no particular vocational aim and being prepared in no special field, she did not know what she would do after leaving college. Both of these problems left her frustrated and disorganized and in an intense emotional state.

Helen reacted to her difficulties by a vague and diffused set of visceral symptoms. The physician whom she consulted gave her pills (prescription unknown) and reassurances. He also recommended active physical exercise, cold baths and strict adherence to a routine of rising, eating and going to bed.

The symptoms disappeared in another month or so. The physician's advice was very sound, but the solution of Helen's adjustment problems was probably the more effective cure. She decided on the vocation of teaching, and on continuing in summer session to pursue special work in that field. She was elected to an honorary society which gave both social recognition and some active duties. Of even greater importance was the fact that she made the acquaintance of another young man whose interest in her provided recognition and also social and, broadly speaking, sexual outlets.

The Origin of Physical Symptoms. The common physical symptoms of the nonadjustive emotional state or neurasthenic condition are excessive fatiguability, aches and pains, digestive disturbance, loss of appetite, insomnia at night and somnolence in the daytime. These are usually accompanied by the psychological symptoms of lack of interest, concern about health, irritability, depression and pessimism. The physical manifestations of neurasthenia are principally the result of a state of continuous emotional tension. To some perplexing personal problem the individual reacts with a persistent emotion, instead of seeking by trial and error to discover some reductive mechanism. Just as the excitation of a temporary visceral state of emotion inhibits the digestive processes of the individual, so a long-continued emotional tension causes, through the action of the

sympathetic division of the autonomic nervous system, a chronic state of indigestion. The fatiguability of the neurasthenic and his apparently constant worn-out condition are largely due to other effects of the continued emotion. In normal circumstances it is always noted that a strong emotional outburst is exhausting. The body cannot maintain this emergency state for long without too great an expenditure of energy. When the emotional response is prolonged as in neurasthenia, the individual's nutritional reserves are used up, and he shows continuous exhaustion. Physiological studies of neurasthenics show the presence of chromatolysis, the dissolution of the chromaffin substance of the nerve cells, a usual finding in any condition involving nerve-cell fatigue. The insomnia of the neurasthenic is due to the continued emotional tension which prevents the relaxation necessary for sleep. Some other neurasthenic symptoms are secondary to those just enumerated. Headaches and other more vague pains are in part due to the digestive disturbance, although they may be adjustive pains of the same type as those found in some cases of hysteria. The sleepiness during the day is the result of lack of rest at night, and the general inefficiency is due to the lowered tone of bodily processes in general, including the action of the nervous system.

Some persistent nonadjustive reactions result in symptoms that are much more severe than those described in Helen's case, and the affected person complains of such extreme exhaustion that he takes to bed. The end-result of this condition is often a psychological invalidism in which the patient assumes a state of total helplessness and has to be cared for as if he were suffering from a serious chronic disease. In such cases, however, the ailment is likely to show great variation in severity, becoming worse when attention is paid to it or when adjustive demands must be met, and much improved when the patient is distracted from the symptoms, or when no one is looking. Instances have been recorded of bedridden neurasthenics who have sat up for long periods to write in diaries, who have climbed flights of stairs to secure food when there was no one to wait on them, and even have danced about in their rooms when they did not expect

to be detected. These observations lead to a suspicion of malingering, of course, but this explanation is not necessary. Since the patient is reacting to an adjustive problem, any extra difficulty in adjustment will cause the symptoms to become worse, any distraction from the troubles at hand will tend to make them disappear.

Adjustive Values in Nonadjustment. Although the symptoms of neurasthenia may be ascribed to the physiological effects of continued strong emotion, this nonadjustive state has a certain paradoxical adjustive value. The physical symptoms assist the patient to rationalize about his troubles, just as do the more localized symptoms of hysteria. If the individual is ill, he feels himself excused from competition and justified in his adjustive failure. The neurasthenic tends to exaggerate his aches and pains and other symptoms and to talk and think about them to the exclusion of other interests. He seeks to get the most out of his condition and dwells on his ailments both to impress others and to distract himself from his real problems of adjustment. The neurasthenic individual is frequently one who needs to achieve the status of a physically impaired person in order to secure or retain the favorable attention of his family. The symptoms may appear in the first place as genuine results of a nonadjustive emotional state, but they are continued for their utility. When circumstances are favorable for the success of this type of response, the person who has failed in his own life adaptation may achieve a low-grade kind of adjustment by imposing on those who love him. He receives his greatest and perhaps only adjustive satisfaction from the sympathy that his ailment gains from others, and may truly be said to "enjoy poor health." Because of their less competitive rôle in life and because a certain social tradition condones their weakness, it is probable that more women than men make use of nonadjustive ailments as an escape. "The nervous housewife" has been described by Meyerson (1920) as a typical picture of neurasthenia.

The Development of Nonadjustive Ailments. The predisposition to nonadjustive forms of response seems to be determined by a wide variety of factors, which may differ considerably from

case to case. In recent years there has been an increasing tendency to emphasize the importance of *physiological* predisposing causes. The lowered vitality of the neurasthenic and the evidences of nerve-cell fatigue have already been noted. It has been found that persons with severe nonadjustive ailments have, with more than chance frequency, suffered from a recent infectious disease such as influenza. If the individual is already weak as an aftermath of such a disease, his energy will be low and any personal difficulties will tend to precipitate a nonadjustive state rather than an active attempt toward adjustment. Glandular disfunction has also been suspected in cases of neurasthenia, the glands which secrete the sex hormone and the anterior lobe of the pituitary gland often showing a lack of adequate secretion. The result of these glandular disturbances is believed to be a general lowering of the tone of the organism. Even if the present hypotheses concerning the physiological predispositions of neurasthenia are entirely substantiated by subsequent research, this condition will not be removed from the field of psychology to that of organic disease. The neurasthenic pattern of behavior is always a persistent nonadjustive reaction to personal difficulties. In spite of the finding that certain organic conditions predispose individuals toward a poor quality of adjustment, the course of the adjustment itself remains a problem that can be understood only from the psychological point of view.

The physical effects of disease are not the sole determiners of the nonadjustive state, however. As was also true of hysteria, neurasthenics are often found to have had a *favorable past experience with illness*. When a patient has enjoyed the attention and special consideration that is given to a physically impaired person, he will not forego these privileges to return to an unsatisfactory mode of living. Nonadjustment may become more satisfying than the best available adjustment would be, and therefore may be continued. Probably a certain proportion of chronic invalidism following serious illnesses is due to the unwillingness of the patient to relinquish his favored position as a weak and dependent person.

Persons who exhibit neurasthenic nonadjustive ailments frequently have a history of having been *excessively petted and coddled in childhood.* When a child who has been accustomed to such fondling finds it denied, feelings of insecurity and of general unhappiness follow. The person who has received an excess of sentimental consideration "feels very much abused" when it is withdrawn. The general state of unrest that follows the cessation of love stimulation involves the opposite type of emotional response, fear, by a sort of contrast effect. The neurasthenic's attitude is very similar to that of the child who cannot adjust to the withdrawal of love. This is especially clear in those cases in which the nonadjustive reaction is precipitated by a sexual thwarting. A sexual basis for the nonadjustive condition is, in fact, so common that many textbooks of psychiatry include "sexual neurasthenia" as a separate category. When an individual has developed the habit of reacting to childhood love relationships in the way described, and especially when, in addition, he inhibits responses to normal sex drives, the neurasthenic reaction is likely to result from the frustration of adolescent or adult sexual behavior. The neurasthenic is the classical picture of the rejected and disconsolate young lover. The case of Helen T. falls principally in this class, although she was reacting to other difficulties as well.

Some other distinguishing features of the nonadjustive emotional response may be noted. A severe *attitude of inferiority* is very common; indeed, some writers have stated that the neurasthenic variety of ailment exists only in persons who have a pronounced reaction to personal inferiority. This is understandable, for the attitude of inferiority is a recognition of personal defects which prevent the attainment of adjustment. If the attitude of inferiority is not reduced by some mechanism of defense, a nonadjustive state is the almost inevitable consequence. The neurasthenic is also typically a *repressed* individual, seriously inhibited by reactions of fear or shame or by unfortunate habit training, from confiding his difficulties to others or from directly acknowledging them himself. This retards the progress of adjustment, as repression always does,

both by keeping the individual from securing assistance in the solution of his problems and by the creation of additional tension.

In administering mental tests to psychoneurotics in the army, Hollingworth (1920) discovered the interesting fact that those diagnosed as neurasthenic were of higher average mentality than those suffering from other forms of disorder, although the overlapping of the groups was considerable. The neurasthenics had a median mental age of 13.0 years (that of the entire native white draft was 13.32 years), while the hysterics' median mental age was only 11.5, a significantly lower figure. It was also noted that the hysterical forms of adjustment were more prevalent among enlisted men. The officers, who were on the whole more intelligent and better educated, tended toward the nonadjustive disorders with visceral or anxiety symptoms predominating. These facts indicate that when placed in equally baffling situations to which no direct adjustment is possible, persons of better mental endowment will select nonadjustment rather than take recourse to some very inferior form of defense such as hysteria. Case studies of persistent nonadjustive reactions often give the impression that a number of mentally superior patients develop the neurasthenic condition because of a refusal to be satisfied with irrational modes of adjustment that might have been acceptable to persons of less critical judgment. There is further evidence that neurasthenics tend to be self-contained, personally oriented and better integrated, as contrasted to the external orientation and dependence on the opinion of others which is characteristic of hysteria. The less well-integrated hysteric develops the partial reaction pattern of the localized adjustive ailment. The more reflective and thoughtful neurasthenic is driven into the whole reaction pattern of the generalized nonadjustive state. These differences are suggestive, but there is no sharp line of demarcation between the personalities of the neurasthenic and the hysteric, save in their life histories that have taught each to adopt his peculiar type of disorder.

The Treatment of Nonadjustive Reactions. Contradictory

statements are often made concerning the frequency of occurrence of neurasthenia, but this is due to variations in defining the condition. Some psychiatrists who define neurasthenia in Freud's terms and count only the "pure" cases, hold it to be a rare disorder. At the opposite extreme are the statements of Fisher (1929) that its frequency is eight to ten per cent of the entire population, and of Meyerson (1927) that all persons pass through neurasthenic phases at one time or another. The latter estimates apply to persistent nonadjustive emotional reactions in general and are very probably correct. This is one of the most common methods of response to baffling difficulties.

Suggestion and stimulation are of some value in the treatment of neurasthenia although they are less likely to produce results than in hysteria. As in the case of maladjustments, the fundamental treatment requires the readjustment of the individual's present problems, and the reformation of his habits of personality. In mild cases a spontaneous solution of the adjustment often occurs, followed by a total disappearance of the symptoms. A change in environment is very helpful in the cure of neurasthenia, even a brief vacation resulting in substantial improvement in many instances. The curative effect of a change occurs because it removes the person from the stimuli to which he has been reacting nonadjustively. By getting the individual away from his work or from his home, the circular nonadjustive reaction is broken up, and a new attitude may be formed.

In more severe cases a number of further difficulties are found. In some instances the patient does not want to get well and is perfectly satisfied with his ailing state because it has come to have adjustive value. Only a radical change in motivation, often extremely difficult to bring about, will do any good for such a person. In other cases the effects of emotion, of irregular habits of life and of concurrent physical disorders have rendered the individual really ill. Then the patient must be treated by a physician with medication and rest in bed until sufficient vitality is restored to render possible a new attack on adjustive problems. Care must be taken to prevent these pa-

tients from lapsing into chronic neurasthenic invalidism. After rest and care have done their part, strong efforts must be made to assist the individual to face his life problems in a vigorous and effective manner.

The treatment of the more severe nonadjustive states is no field for the amateur psychologist. The partly informed student of psychology is not competent to distinguish between the psychoneuroses and organic disorders which may have rather similar appearances. Experienced psychologists deal with nonadjustive ailments, and also hysteria, only in collaboration with a physician and when thorough physical examinations have eliminated any great probability of a basically organic disorder. Unfortunately, the ordinary physician is often as inadequate in his handling of a psychoneurosis as an unaided psychologist would be. If the physician treats only the physical symptoms, leaving the underlying psychological problem undiscovered, little effective progress will be made. The patient deserts the physician for quacks, the quacks for mental healers, who may or may not do him any good. Only combined physical and psychological care can be of much assistance in serious cases of psychoneurosis. The ideal arrangement is to have the difficulty cared for by a psychiatrist who is trained in both the medical and scientific psychological fields. In many cases physical and adjustive treatments must be given together, and both contribute to the cure of the nonadjustively determined illness.

ANXIETY AND WORRY

Anxiety State. When the fear component of a persistent nonadjustive reaction is the most conspicuous feature, the condition is often called an anxiety state or *anxiety neurosis.* This response is even more nonadjustive than is the neurasthenic variety. In the nonadjustive ailments, the patient gains some slight satisfaction from ascribing his difficulties to illness and from the sympathy that he receives. An anxiety state has no reductive value at all, the emotional upset remaining undiminished. Most persons who suffer from severe anxiety show the

same sort of visceral symptoms as do neurasthenics, with the more distinctly psychological reaction of intense fear superimposed.

Anxiety state is well illustrated by the case of Thomas R., an eighteen-year-old high-school senior who was referred to the vocational counselor of his school because of failing work and an attitude of despair and fear that was noticed by his teachers. Interviews disclosed that the boy's anxieties are not connected to any one definite situation, but are very much diffused and vague. He is concerned about his academic standing, and particularly about his father's reaction to it. Referring to his possible school failure, he says "It will be the end for me." He feels an acute social incompetence and says in a vague manner that he does not know about the world, that he has many things to learn. Thomas has had little association with girls and feels afraid of them or rather of his inability to impress them as favorably as do the other boys. During the preceding year he had a few engagements with a girl a little older than himself, on which he placed an excessive value, considering himself in love. The girl has now gone away to college, and Thomas feels afraid of "losing" her. He is utterly unable to make decisions. The simplest problem causes him to seek advice or to feel incompetent to face the difficulty. In addition, Thomas considers himself to be physically ill, his concern centering around the condition of his heart. At times his heart beats very rapidly and his pulse pounds in his ears. Although several physicians have examined him and discovered no organic disorder, he often rests in bed from early Saturday evening until Sunday noon because of his supposed heart disease. The intensity of Thomas's anxiety is best disclosed by notes that he scribbled from time to time and gave to the counselor. He wrote: "I can never be at rest and am never satisfied. I fear of not being able to control my mental and physical actions. Something is always elusive. I am more afraid of life than the basest coward. Why can't I understand people? Why can I remember only my fears, the vacant mental situations and the lonely places in my life? I seem to exist isolated. All the clean wholesome desires which

make a man want to live seem to be crushed. Will I snap out of this, or will I never be a man?"

Thomas's anxiety state may be interpreted as an extremely nonadjustive response to all of the principal problems of the adolescent. He faces the issues of the choice of a vocation, the continuation of his education, financial independence, social and sexual adjustment, quite unable to achieve a satisfactory course of action in any of them. One of the chief causes of his lack of preparation for these adjustments was found in the personalities and attitudes of his parents. His father, a successful owner of a small factory, is a large dominating man who has always made Thomas's decisions for him. When the boy was asked about his hobbies and interests, he said that his father had him study the violin when he was ten, that his father got him to join a woodcraft group. The father also chose the boy's studies in high school and had made definite plans for his higher education. Thomas had apparently never made an independent decision in his life. He did not resent his father's dominance, however, but was overwhelmed by it. In the interviews he constantly asserted how good his father had been to him. Thomas's mother is a small, subdued woman utterly dominated by the father and described as very "nervous" and weak. It seems as though she too is reacting nonadjustively to her life problems, which fact has greatly influenced her son. The mother is extremely religious, and from her Thomas has acquired a deep sense of sin and a conviction that dancing, escorting girls, attending the movies, and in fact almost all of the usual adolescent diversions, are very immoral. With the drives of mastery thoroughly subdued by the father and those of sex by the mother, and with inadequate training toward any kind of independent action, it is no wonder that Thomas has responded nonadjustively.

When the effect of emotion on heart beat and on other visceral functions was explained to him, Thomas seemed greatly relieved, and reports that he has had no "heart spells" since. The rest of the anxiety state will be more difficult to cure. When Thomas has a job, an independent income and has moved away

from his family, readjustment may come about. A lifetime of inadequate training will have to be overcome, however, and this cannot be accomplished in a few months or even in a few years.

Characteristics of Anxiety. The keynote of the anxiety condition is, of course, a broadly transferred fear reaction. Aroused by some serious adjustment problem, the fear state remains unreduced and hence is renewed by any other perplexity, however trivial. A common characteristic is *morbid dread.* The seriously anxious person always expects the worst. He may show a constant dread of sickness, of bad news, and especially of the unfortunate outcome of any undertaking that he may start. Closely related to the dread is the phenomenon of *indecision.* The individual is unable to make up his mind permanently on any question. He suffers from the "*folie de doute*"; having once made a decisive act he constantly reviews it and wonders if it was the correct thing to do. The "pangs of conscience" frequently assail him and he is excessively scrupulous and morally sensitive. When the anxious expectation concerns his own health the condition is described as *hypochondria,* which has sometimes been considered as a separate class of reaction. Typical hypochondrias concern bodily organs and functions that can be affected by emotional states and which are also subject to well-known serious organic disorders. Heart disease is perhaps most often feared, and various visceral aches and pains may be interpreted by the patient as signs of tuberculosis, kidney diseases or cancer.

No sharp line can be drawn between the neurasthenic and anxiety states. Both are persistent nonadjustive responses to problems that are too much for the ability and training of the individual. The distinction between these two conditions is only one of emphasis. In the neurasthenic reaction the bodily symptoms are most conspicuous, although there is usually anxiety of relatively less intense degree. In anxiety neurosis the fear is most apparent, the physical disabilities being present but subordinated to it. The anxiety state, in its severe form, may be regarded as one step worse than the neurasthenia. The person who shows the neurasthenic pattern is unable to reduce

his visceral emotional tension, but he does succeed in diverting himself from his real problems by means of the preoccupation with his bodily symptoms. The anxious individual does not achieve even this partial adjustment but continues keenly aware of his baffling difficulties, reporting the mental state of fear as well as the physiological signs of it.

Common Worry. Ordinary worry is the most frequent of nonadjustive responses. It differs only in degree from the anxiety states, but this distinction is a great one, for almost everyone worries to some extent, yet is able to achieve a passable kind of life adjustment. Worry typically concerns more specific problems than does anxiety and is less continuous, disappearing when the simple causal factor is removed. In worry the random nonadjustive behavior of the individual is chiefly *verbal* in character. This takes the form of a continued contemplation of the problem at hand. The worrier thinks over his predicament again and again, but not constructively. Worry typically concerns a past or an unchangeable act about which it seems impossible to do anything. It is an ineffective form of trial and error, and therefore an activity response to a stimulus. Worry has often been described as caused by the necessity of doing something about a problem about which nothing really useful can be done. At times the worrier will speak his meditations aloud and derive some tension reduction from telling them to others, but usually the speech is implicit rather than explicit. Worry involves a *circular reaction* that aggravates the persistent nonadjustive state. The original situation arouses emotion and verbal activity together, hence by the ordinary process of simultaneous learning the verbal component itself becomes a substitute stimulus for fear. Thus fear arouses worry and worry arouses more fear, the physiological state of emotion being constantly stimulated anew. The visceral states act as in neurasthenia and in anxiety to impede digestion and may result, in chronic cases, in the individual "worrying himself thin."

In most worries the situation to which the individual vainly seeks adjustment is not an external one, but is a problem of

personal inadequacy. Since an attitude of inferiority implies the recognition of inability to adjust, the presence of worry in such cases is not unexpected. Even in persons who have acquired defense mechanisms, periods of worry usually alternate with those of overaggressiveness. The problems most often worried about are those which persons are most likely to meet without adequate preparation. Worries which concern the choice of a vocation or success in it, those which relate to social adjustments, and worries about sex problems are probably the most frequently found among adolescents and young adults.

Worry often involves repression in the form of an inhibition against seeking advice in regard to the subject of anxiety. If an individual has to adjust to a personal problem that he feels to be shameful or to which he attaches a fear of social disapproval he may fail to secure assistance to supplement his own inadequate ability to deal with it. The fear of insanity offers a good example of this. Uninformed persons frequently have strange notions about mental disease, particularly in regard to its inheritance. If they repress the thought of impending insanity and hence fail to seek advice from competent persons, an unnecessary anxiety may haunt them. Reassurance and education usually remove a simple fear of this type without much trouble. A more thorough type of repression than the mere inhibition against seeking advice operates in some cases. A number of persons may be found who are chronic worriers. They do not confine their worry to any specific issue, but worry indiscriminately about any possible problem. Some of these cases are due to a habit of worry, starting with some really important difficulty, that becomes established and is employed thereafter in many inappropriate situations. In other cases worry over a trivial matter is a substitute for fear having some more fundamental basis, the recognition of which is prevented by repression. In such instances treatment is difficult. To argue against the present trifling worries is futile, even to do away with them is not permanently effective. The repression that acts in relation to the real underlying problem must be removed and, furthermore, it is necessary to have the patient

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thoroughly readjusted to the original strong fear-producing situation.

The Relief of Worry. Since worry is a very common human problem, some practical hints concerning the treatment of ordinary worries will not be out of place. These procedures will not cure all cases, but their performance will relieve many of the less severe worries that are so frequently encountered by nearly all people. (1) Set a time for the consideration of the problem. One of the chief aggravating factors in worry is the tendency to put off painful acts or unpleasant thoughts. Meanwhile the tension remains unreduced. (2) Confide in someone, confess all about the worry, and talk it out. Fears which seem great when considered in solitary contemplation often become trivial when discussed with an impartial observer. (3) Get advice and seek assistance. Many worries are due to inadequate information concerning a problem, or to the inability of the worrier to discover a good solution. Someone who knows more may be able to help. (4) Evaluate the cause of the worry. If the anxiety is over a minor affair and the emotion is too great for such a cause, it may be due to some other fear for which the present stimulus is a substitute. The discovery of the underlying causes can sometimes be accomplished alone or with lay advice, but the assistance of a psychiatrist or psychologist is valuable. (5) Do something active about the causes of the worry. In worries concerning school marks, a good session of study is tension-reducing, even though it may not completely solve the problem. In social worries, participation in any social activity will help to relieve the fear. Since worry is a nonadjustive response, any active attitude will tend to reduce it. (6) If it is impossible really to remedy the situation worried about, the development of *balancing factors* of a socially acceptable nature is desirable. Balancing factors are activities such as hobbies, sports, social activities, and the like, which give temporary tension reduction in times of emotional stress. These interests assist the individual in returning to normal emotional tone, after which another attack on the worry-producing problems may be more effective.

SO-CALLED "NERVOUS" CONDITIONS

"*Nervousness.*" Probably no term relating to human behavior is more widely and at the same time more loosely used than the term "nervous." Properly, nervous means "pertaining to the structure or operation of the nervous system." In this sense, it is correct to say that encephalitis lethargica (sleeping sickness) is a nervous disease, for it is one in which there is a direct inflammation of the nerve tissues. Since the eighteenth century, however, an essentially incorrect use of the word "nervous" to designate an irritable, nonadjustive, "jumpy" or anxious state has become current. This application of the term is entirely a popular one and receives little sanction from medical or psychological literature. One looks in vain for any such category as "nervousness" in the more solid textbooks in this field. Even so, psychologists and physicians are guilty of contributing to the popular misconception, for the term is often used descriptively by them, and is even more frequently employed to put off a patient who demands to know the nature of his condition. The physician tells the insistent patient that his nonadjustive reactions are "nervous," either because he does not know what else to say or because by doing so he avoids a long discussion of the real nature of the problem. Since "nervousness" is used in many inexact senses, it cannot be said to have any precise meaning. In popular speech "nervousness" is sometimes used to describe a real organic neurological disorder such as chorea (Saint Vitus's dance), while sometimes it refers to a maladjustment or psychoneurosis which is quite a different thing. Most often, however, "nervousness" designates a certain aspect of nonadjustment. This usage is the most important and will be considered here.

The typical symptom of ordinary nervousness is a tendency to make *useless and diffused motor responses.* The nervous person cannot sit still, but twists, moves and fidgets even when he is in a comfortable position, a relatively interesting situation, and is free from definite external annoyances. Stereotyped motor acts which are often called nervous habits are common.

These include persistent nail-biting, nose-picking, hand-rubbing, drumming with the fingers, and innumerable other repeated acts. A similar nervous symptom is the *tic*, a spasmodic contraction of some muscle group, most often seen as a twitching of some part of the face. While tics may be caused by an organic condition in some cases, they are usually a sign of diffused response to emotional tension. Tics which become worse when attention is paid to them are almost always of psychological origin. Another type of behavior commonly described as nervous is *excessive readiness to react* to chance stimuli. Sharp noises elicit an unusually strong startled response. Persistent sounds, such as those of traffic or of domestic machinery, are unbearably annoying. Slight dangers or grievances are reacted to by unexpectedly intense emotional outbursts which sometimes seem to have very insufficient rational cause. The nervous person is often described as *irritable*, which is another aspect of the too ready arousal of emotional reactions on slight provocation. A number of minor symptoms of the anxiety state are usually present in nervousness, especially *indecision* and *dread of the future*.

The pattern of nervousness just described has only one psychological meaning. It is the result of a nonadjustive reaction to unsolved personal problems. The nervous person has some motives that remain unsatisfied or faces some situation to which he can make no adequately adjustive response. The inevitable result of this state of affairs is the creation of an emotional tension. Lacking any definite outlets, either in direct action or in defense mechanisms, the emotional state remains unreduced and hence stimulates the individual to make his diffused responses. This also explains the irritability or excess of readiness to react. The emotional tension reinforces or facilitates the response to any stimulus that may happen to act on the individual. Nervous behavior is tense behavior, the manifestation of a continued stimulation arising from a visceral state. Both petty, temporary nervousness and the more chronic varieties arise from the same underlying causes. The young man who is about to have an important conference with his employer

is nervous as the result of a fear tension which, however, subsides as soon as the event is passed. The chronically nervous person is reacting emotionally and nonadjustively to a personal problem of long standing which is frequently an attitude of personal inferiority. In the chronic type of case the nervous response may become habitual and may therefore be continued long after the problems which first elicited it have ceased to exist.

There is a very prevalent popular misconception of the cause of ordinary nervousness. Usually it is considered to be a subtle organic complaint, ascribed to "weak nerves." The typical nervous person believes that his disorder is due to a general weakness of the nervous system, entirely analogous to an "upset stomach" or a "weak heart." This notion is almost entirely incorrect, for the nervous system is not a mechanical organ like the heart or the digestive tract. What is weak in the nervous person is not his "nerves" but his habits of meeting problems and his adjustment to his environment. The popular error concerning nervousness is reinforced by several apparently confirming observations which are true in fact, but which are usually given an incorrect interpretation. It has already been noted that real organic disorders of the nervous system are called nervous diseases. Most of these are serious affairs that no one would confuse with ordinary nervousness. While some of them, such as chorea, result in tremors, twitchings and a lack of co-ordination that may seem to have some similarity to nervousness, the resemblance is superficial and confuses only very uninformed persons. Another misleading observation is the fact that certain glandular conditions, notably an overactivity of the thyroid, cause a degree of excessive responsiveness that very closely resembles ordinary nervousness. A number of so-called nervous persons are undoubtedly suffering from glandular imbalances, but the great majority of cases of nervousness are not due to this cause, but to purely psychological reactions. It is also noted that many nervous individuals are suffering from chronic physical disorders including arthritis, gastric ulcers, gallstones and many others. In most such cases, however, the

physical disease is not a direct factor in causing the nervousness, but an indirect one. The person suffering from such a disease fears for his future, especially if treatment is prolonged and the results slow. He therefore reacts nonadjustively to his personal handicaps, the emotional reaction being the source of the nervousness, rather than the disease itself. The frequency of this condition is considerable. In a survey of two hundred consecutive "nervous" cases in a small city, Hamilton (1925) diagnosed forty-six of them as suffering from "persistent nonadjustive affective reaction to baffling physical discomforts and disabilities." This was the largest single group discovered in his study. In such cases the cure of the annoying physical disorder usually results in the disappearance of the nervousness.

Another reason for the popular belief that nervousness is an organic disease is the fact that it seems to be alleviated by certain drugs and medicines. The medications most often used in these conditions are known as cerebral depressants and include the bromides and the somewhat milder drug valerian. The effect of a cerebral depressant is to lower the total reactive tone of the organism by reducing the intensity of the outflowing motor impulsations. Its use to quiet restlessness is analogous to the use of an anaesthetic drug to relieve pain. In both instances the symptom is made less annoying, but in neither is the basic cause of the trouble removed. Cerebral depressants do not "strengthen" the nerves, but merely lull them into inaction. When properly prescribed by a physician these drugs have considerable value. They relieve the severity of the nervous symptoms, which are themselves an annoyance, convince the patient that he is improving, and make possible a more rational attack on the adjustive problems concerned. Many patent medicines, so-called "nerve tonics," give temporary relief for nervousness, but are harmful in the end. Some, especially if they contain bromides, have a permanently injurious effect on the body. Even relatively harmless medicines cannot accomplish a permanent cure, since only adjustive treatment can do this for a psychological problem.

Overcoming ordinary nervousness is not an easy matter,

however, particularly if the condition has become chronic. When the baffling problem that maintains the emotional tension is an external one, its removal will effect a cure. Changes in mode of living, in occupation, in marital status, in associates, all may be helpful if they take the nervous person away from the stimulus for his persistent nonadjustive state. Many cases of nervousness cannot be so cured because the patient carries his stimulus around with him in the form of an attitude of inferiority and a generalized fear reaction to a wide variety of situations. If detected early in life, readjustment can often be effected by giving the individual insight into his condition and by assisting him to respond actively to his difficulties and handicaps. The exact type of treatment needed varies widely, of course, according to the nature of the problem to which the nonadjustive response is being made. When nervousness has become chronic and habitual, a total cure is seldom achieved, but any favorable change in the circumstances of the individual or in the quality of his adjustments may cause improvement.

"*Nervous Breakdown.*" Even more vague and variable than the classification of nervousness is that of the so-called nervous breakdown. This term has no exact meaning whatsoever, and serves no useful purpose in the psychology of adjustment. *Nervous breakdown is not a specific entity;* it is not even a more or less definite behavior pattern in the sense that neurasthenia and nervousness are. It is a blanket term used popularly to describe all sorts and kinds of maladjusting conditions of a marked degree of severity. Sometimes a nervous breakdown means a physical breakdown. Sometimes the term is used as a euphemism for a major psychosis, because, due to common fears and prejudices, to have a nervous breakdown sounds more respectable than to be described as insane. In other instances nervous breakdown is used to signify a psychoneurotic condition of severe neurasthenia or nervousness. This is probably the most common meaning of the term. In still other cases, however, "broken-down" means no more than "fed-up," and is used as an excuse for escaping from an unpleasant situation.

In spite of its vague meaning, or perhaps because of it, nerv-

ous breakdown is a diagnosis very frequently reported by physicians and even more often used by patients and their families in describing some kind of serious adjustive difficulty. The frequency of use of this term, and also the variability of its application is strikingly illustrated by a finding of Culpin (1931) in a mental hygiene survey of certain industries in Great Britain. In the five concerns investigated, the proportions of long sick-leaves ascribed to nervous breakdown were 36.9, 20.3, 10.6, 0, and 0 per cent, according to the companies' own records. It is inconceivable that a disorder accounting for more than a third of all long illnesses in one plant should be totally absent in two others. The explanation of these perplexing data lies in the diagnostic habits of the physicians who did the classifying. Some tended to use the term; others did not. When a more objective survey was made of all of the employees, 18.0 per cent of those in one plant which had *no* "nervous breakdowns" were found to have marked symptoms of nervousness, while only 16.6 per cent of the workers in the factory reporting the highest proportion of "nervous breakdowns" were so affected, the difference between the two concerns being therefore really negligible. These facts emphasize the meaninglessness of the term, for it does not stand for any definite or reliable fact in relation to mental health.

Nervous breakdowns and other more securely classified forms of persistent nonadjustive reaction are very frequently ascribed to overwork. In almost every case of a student ailment where this term is employed, the assertion is made that "he studied too hard and fatigued his brain." This is a ninety-nine per cent falsehood. It is probable that in a very few cases overwork does cause a lowered vitality that predisposes the individual to nonadjustment when he meets some baffling difficulty. If overwork causes loss of sleep, lack of normal exercise and irregular eating habits, a state of physical debility will be brought about, caused not by the overwork, but by the ignoring of physical hygiene. In the overwhelming majority of cases, however, the cause and effect relationship is of very different character. When confronted with the real or imagined possibility of failure

in school, the student's first adjustive impulse is to study earnestly. In most instances this is effective and the difficulty is removed. When study will not eradicate the fear of failure, the individual may give up and lapse into a persistent nonadjustive response of neurasthenic or anxiety types, which may popularly be called a nervous breakdown. Note that the overwork does not cause the breakdown. Instead, the excessive application to studies is an adjustive attempt; the so-called breakdown is a reaction to the failure to secure adjustment. The same pattern often appears in adults in their occupational situations. An individual who is reacting strongly to a personal problem may find that work is tension-reducing. The perplexed business man puts in long hours at his office as a response to his visceral state, finding this more satisfying than the alternative of random motor response. If he continues to be unable to adjust, a "breakdown" ensues, which is due not to the overwork, but to the same factors which caused the overwork. Of course, to believe that one's breakdown is caused by overwork is highly respectable and gratifying, and the rationalization value of this belief helps to perpetuate the fallacy. In general, it is not overwork but overworry that causes nervous breakdowns, as persistent nonadjustive emotional responses.

Miscellaneous Labels. When all of the cases of serious personality maladjustment that will fit under the classes of hysteria, neurasthenia, anxiety and "nervousness" have been accounted for, there still remains a large number of miscellaneously maladjusted individuals whose symptoms do not precisely match the classical patterns. Many attempts have been made to subdivide and name these conditions, but the results, on the whole, have not been very successful. A few of the more common labels are enumerated here, not because they have any real value, but because the reader should be warned against considering them as explanatory concepts. One of the broadest of these terms is "psychopathic personality," widely used to designate any otherwise unclassifiable pattern of behavior that seriously interferes with an individual's social relationships. Since such utterly divergent conditions as chronic laziness,

habitual lying, incorrigible criminality and sexual inversion have all been described as due to "psychopathic personality," the term falls through the weight of the load it is compelled to carry. Only if considered as signifying "some kind of a disorder due to psychological factors" does this label have any meaning whatsoever.

The word "constitutional" is often gravely attached to terms in this class, as if it had an explanatory significance. Thus "constitutional psychopath" and "constitutional inferior" are sometimes met in the literature, especially in older psychiatric writings. Most cases described as "constitutional inferiors" or "inadequate personality" were individuals who lacked responsibility and economic stability to an extreme degree. These persons typically were lazy, shiftless and improvident, drifting from job to job or content to live meagerly on charity. "Constitutional psychopath" seems to be most frequently applied to persons who, while free from physical or intellectual defect and from any usual symptoms of a psychoneurosis, behave in ways that are not understandable to ordinary people whose conduct is more socially oriented. So-called psychopaths are those who, without apparent reason, prefer to live as prostitutes or criminals, to lie or swindle, and to associate with persons of socially disapproved status, rather than to behave according to more normal social expectation. The term "constitutional," when applied to such persons, conveys the unfortunate and misleading impression that their behavior is inherited and unmodifiable. Just as general psychologists formerly used "instinct" to dispose of any behavior that they could not understand, so the psychiatrist who employs "constitutional defect" merely covers up his ignorance. While it may be hard to discover a cause for "psychopathic" behavior in the experiences and training of the individual, it is equally true that no positive evidence exists showing such states to be the result of inherited organic defects. The popular procedure of blaming heredity is often a buck-passing device, not a well-authenticated fact of scientific research.

The existence and frequency of maladjustments and non-

adjustive states that do not fit nicely into a scheme of classification throws doubt not only on the validity of the vague terms such as "psychopathic personality" but also on that of the more widely accepted ones such as hysteria, neurasthenia and anxiety neurosis. Even the latter terms should not be considered as representing "types" of reaction to difficulties but *modalities* of adjustive behavior. The most important consideration is the individual, not his disorder. In any case of human perplexity the crucial questions are these: To what situation is he adjusting inadequately? By what means is he making his partial adjustments? What factors in his experience and training led him to his present behavior? How can he be guided to a better degree of adjustment? If these questions can be answered, a thorough understanding of the individual and his problems can be achieved without the use of classifications or labels of any kind. Names and concepts should be regarded as necessities of teaching procedure, designed to assist the student to remember the phenomena themselves. In clinical practice the problem of classification should assume a subordinate rôle and the individual should be considered not as a type of case, but as a unique human being.

SUGGESTED READINGS

A very complete account of "nervous" conditions, using the concept of the persistent nonadjustive reaction, is given by Hamilton, *Introduction to Objective Psychopathology*. This book contains histories of 200 "nervous" cases, from the practice of a physician.

The general references on the psychoneuroses cited at the end of Chapter IX are also pertinent to the problems of the present chapter. Supplementary illustrations and descriptions of worry, anxiety and neurasthenia may be found in Bagby, *The Psychology of Personality*, chap. 6; Sherman, *Mental Hygiene and Education*, chap. 10; Fisher, *Introduction to Abnormal Psychology*, chap. 8; and Myerson, *The Nervous Housewife*.

Part III
PERSONALITY

CHAPTER XI

PERSONALITY TRAITS AND THEIR MEASUREMENT

PERSONALITY AND ADJUSTMENT

The Concept of Predisposition. The fundamental theory of the psychology of adjustment is that behavior anomalies arise as the result of inadequate modes of response to the thwarting of the strong motives of the individual. This generalization implies that the cause of maladjustment is to be found in the necessity of having to adjust to life situations. If an individual could live in an environment in which no frustration of his motives could occur he would certainly develop no maladjustments. This is, however, only an incomplete conception of the causes of disorders of behavior. When confronted with equally baffling situations, various persons show great differences in their ability to adjust successfully. In the war, for example, vast numbers of young men were subjected to the same intense conflict between the reactions to fear and the reactions to social approval. Most of them remained well adjusted or else developed defenses of a simple and relatively harmless nature such as frivolous compensatory attitudes. Again, many individuals possess real physical, social or mental inferiorities but most of them do not show the defenses against inferiority that have been described, or else develop good compensations of social value. These instances make evident the fact that maladjustment cannot be ascribed to thwarting alone, since many persons endure serious frustration without any disastrous consequences.

A more complete understanding of the causes of maladjustments is made possible by the distinction between *precipitating factors* and *predisposing factors*. The immediate situation which the individual faces may be the precipitating cause of a maladjustment. The presence and degree of the direct thwart

ing determine *when* an individual will have to adjust, but play only a minor rôle in fixing the quality of his adjustment or in deciding what mechanisms he will employ. The predisposing causes of maladjustment, in contrast, lie farther back in personal history. How an individual will adjust to the blocking of his motives depends primarily on *what kind of a person* he is when the thwarting occurs. Individuals show significant differences in their ability to tolerate thwarting and also in the types of adjustment mechanisms that they habitually employ. These differences have been described as variations in *personality*. The personality of an individual may be defined as his persistent tendencies to make certain kinds and qualities of adjustment. The predisposition to maladjustment lies in the possession of personality characteristics that tend toward a nonadjustive response to baffling situations, or toward one form or another of inferior solution.

Problems of Personality. The concept of personality is difficult to treat with precision, for it corresponds to no single or simple trait. Personality does not depend upon one or a few characteristics only, but upon the interaction of practically all of the traits of the individual. Physique, intellect, motives, experiences and habits all contribute to personality and not as separate entities but as an organized system. In spite of this complexity, the problems of personality remain those of individual differences. Personality depends on variations in individuality. If all persons were alike in their adjustive tendencies, the problem of personality would not exist or, at least, would not call for extensive psychological consideration. In all fields in which individual differences are studied, two basic problems present themselves. These are the *differentiation and measurement* of the qualities concerned, and the discovery of the *sources or causes* of the differences. The principal problems of personality are therefore the measurement of its variations and the investigation of its origins and development.

The differentiation and measurement of personality is not a simple matter, since it relates to so many aspects of the individual's make-up. Unlike the trait of "intelligence" for which

there exist fairly satisfactory practical tests, most personality traits cannot be measured on a single scale or expressed by a definite numerical figure. The difficulties in the measurement of personality have caused this field to lag far behind many other aspects of psychological progress. Until recently only crude and descriptive differentiations based on interviews and general impressions were possible. The chief result of this primitive approach was the doctrine of "personality types" which is still sufficiently alive to warrant consideration. In recent years some more exact quantitative methods have been applied to problems of personality. A number of these studies have been directed to the measurement of the degree to which normal individuals display some more or less definitely defined trait or component of personality. Other researches, less well known and less advanced at present but perhaps ultimately more important, have attempted to discover and measure characteristics in which maladjusted persons in general differ strikingly from those who tend toward a better quality of adjustment. These two trends of research, the measurement of normal personality traits and the differentiation of the maladjusted, are closely related and overlap at many points, and hence cannot be considered separately. The present chapter will describe some of the problems, methods and results concerning personality traits and their measurement.

The second great problem of personality, and the more significant one, is that of tracing the origin and development of individual differences in adjustive tendencies. If the techniques of personality measurement were more precise and refined they would lead inevitably to the solution of this second problem. It would be necessary only to measure personalities as they develop and to measure the influences affecting them, then by the correlations shown to discover the sources and conditions of growth of personality traits. Unfortunately, only a small beginning has been made in this desirable direction. Most of the available information is derived from case studies and other data of a descriptive nature. In spite of the relative unreliability of these methods, however, the present theories

of personality development that are consistent with sound principles of general psychology are of considerable practical value and are probably substantially correct. The two chapters which follow will attempt to evaluate the rôle of structure and of experience, respectively, in the formation of characteristics of personality.

PERSONALITY "TYPES" OR PERSONALITY TRAITS?

Doctrines of Types. Since the differentiation of personalities involves the determination of "what kind of a person" a given individual is, a very natural tendency is to classify all mankind into various *types*. Human attention is easily attracted to that which is striking and different, hence we tend to think of persons as being good or bad, bright or dull and tall or short. That these qualities are really present in a continuous gradation from one extreme to the other, without any definite separation into classes, is often a difficult concept to grasp. In the field of personality, where quantitative measurement has been slow in development, the habit of dividing people into types has been especially prevalent and persistent.

The classification of personality types was one of the earliest activities within the field of psychology. Theophrastus, a contemporary of Aristotle, wrote thirty sketches of types of human personality that are still remarkable for their freshness and clarity. The most influential of the ancient concepts of personality types was that of the four temperaments, which is ascribed to Hippocrates (400 B.C.) and modified by the Roman physician, Galen. The *sanguine* temperament was described as active and quick but lacking in strength and permanence. The *choleric* was easily aroused and strong but irascible; the *melancholic* was slow and pessimistic; the *phlegmatic* was slow and also weak and stolid. The four temperaments were ascribed to an excess of one or another of the bodily fluids or "humors" which were designated as blood, yellow bile, black bile and phlegm respectively. Normal personality was believed to result from a proper balance of all the temperaments,

an interesting forecast of the concept of integration. During the Middle Ages and well into the modern period the doctrine of the temperaments was accepted as undeniable truth. Centuries of belief in the notion of separable types of personality has not been without its effect on social tradition. The ready acceptance that has greeted the more recent attempts to define personality types is undoubtedly due in part to a persistence of ancient and medieval ways of thinking.

The number of ways of classifying personality types that have been proposed in recent times almost defies enumeration. One of the most interesting is the division between *rationalist* and *empiricist* of William James (1911). The rationalist or "tender-minded" person is guided by principles and abstract ideas and tends to be idealistic and religious. The empiricist is described as "tough-minded" and practical, influenced by facts and expediency. The correspondence of these types to two of Jung's, which will be described later, is striking.

A number of type classifications have been based on the characteristic differences observed between persons suffering from the two most common forms of serious mental disorder, dementia praecox (schizophrenia), which has already been mentioned, and manic-depressive psychosis which is characterized by extremes of either emotional exaltation or depression. The *autistic* or *schizoid* type is described as shy, uncommunicative, given to phantasy, showing few external interests, and not participating in social pleasures. The *cyclothymic* or *cycloid* personality, in contrast, is given to ready emotional expression, ready to cry or to scream, and likely to be boisterous, talkative and unstable. It is at least true that patients manifesting the two varieties of psychosis mentioned frequently show a history of having had these symptoms, and that the same traits are present in lesser degree in many other people. Rosanoff (1927) distinguishes two other abnormal types in addition to the autistic and cyclothymic. These are the *antisocial* personality which he believes to underlie hysteria, malingering and criminality, and the *epileptic* personality. The two last named types have not been so widely accepted, as the first is usually regarded

as a mixture of several diverse elements, and the second as obvious and not widely applicable.

Jung's Types. No other classification of types has aroused more interest, research and controversy than has that proposed by Carl G. Jung (1923). His best known distinction is between the "general attitude types" of *extravert* and *introvert.* Briefly stated, the extravert is one who is dominated by external and social values, while the introvert takes a subjective view and is governed by the relationship of things to himself. The characteristic differences between the two types, as described by Jung, may be tabulated as follows:

EXTRAVERT CHARACTERISTICS	INTROVERT CHARACTERISTICS
1. Directly oriented by objective data	1. Subjective determinants are the more decisive ones
2. Conduct governed by necessity and expediency	2. Conduct governed by absolute standards and principles
3. Accommodates readily to new situations	3. Lacks flexibility and adaptability
4. Is negligent of ailments, not taking care of self	4. Is overattentive to ailments and careful of self
5. Adjustments are compensatory	5. Adjustments are made by withdrawing and phantasy
6. Typical psychoneurosis is hysteria	6. Typical psychoneurosis is obsession or compulsion state

This enumeration represents the extravert as the man of action and the introvert as the man of deliberation, which is the conception that has had the greatest influence on psychological discussions of personality. Jung's own complete picture of personality types is not quite so simple, and the usual condensations are perhaps somewhat unjust to his entire theory. In addition to the general attitude types so far described, Jung also distinguishes four special "function-types" based on his analysis of the chief varieties of human expression. These are stated as *thinking*, *feeling*, *sensation* and *intuition.* According to Jung, one or another of these four processes is especially differentiated or well-developed in a given individual and hence plays a dominant rôle in his adaptation or orientation to life. Since the extravert-introvert classification overlaps the four special

types, eight principal classes of personality are indicated. The "extraverted thinking type" is concerned with facts and their classification, the "introverted thinker" with theories and with their application to himself. The "extraverted feeling type" wishes to be in harmony with the outside world and is able to achieve close sympathy with others, while the "introverted feeling type" is chiefly concerned with his internal harmony and tends to depreciate the influence of outer factors. The "sensation" types, principally influenced by pure pleasure and pain, and the "intuitive" types, dominated by indirect judgments or "hunches," are also either extraverted or introverted. This doctrine is further complicated by Jung's assertion that more than one of the four main functions may be important, and that an individual may be extraverted in one function but introverted in another. Also, if the "conscious" is extraverted in any one line, the "unconscious" attitude is introverted and *vice versa*. Jung's complete theory counteracts the excessive simplicity of the primary extravert-introvert classification, but does so by plunging into complications bordering on obscurity.

Jung, like most of the strong proponents of definite types, considers all persons to belong definitely to one or another class, and assumes these differences to be inborn. He states that they can be modified, as when a natural-born introvert is forced by circumstances into extraversion, but believes that such transformations are superficial and that an abrupt change is likely to result in a psychoneurotic condition.

An Evaluation of Concepts of Type. The principal objection to all theories of personality types is to their contention, either implied or directly asserted, that all persons fit exactly in one or another of a small number of classifications. This does not agree at all with the known facts. It is obvious that all persons are not either tall or short, but most lie between these extremes, the gradation being a continuous one. This same concept of the existence of a continuum rather than of types, should apply as well to "good" and "bad" and to the manifestations of personality. In Figure 19, I represents the extreme stand of those who uphold a doctrine of types. Diagram

II depicts an ineffective kind of compromise often suggested, such as the existence of a mixed type known as the *ambivert* intermediate between introvert and extravert. Although II represents a nearer approximation of truth than does I, it is still not entirely correct. By analogy from exactly measured traits such as height and from some measures of personality shortly to be described, it becomes evident that the variations of an aspect of personality are more nearly like diagram III. Persons are alike rather than essentially different in the kinds of traits that they possess, but differ in *degree*, most people showing the trait to an intermediate degree with decreasing numbers which tend toward the extreme in either direction.

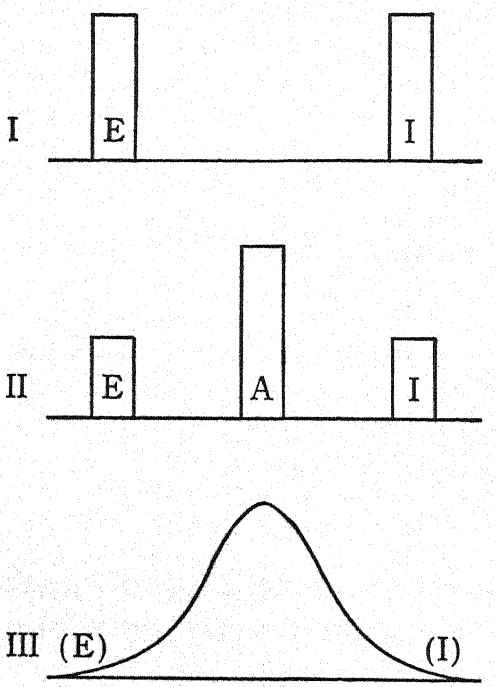

FIG. 19. CONCEPTS OF PERSONALITY TYPES AND TRAITS

I indicates the incorrect conception that all people are of one type or another, as introverts and extraverts. II is a compromise that places the class of "ambiverts" between. III shows the nature of a continuous distribution, with no gaps, most people near the center, and smaller numbers toward both extremes.

Another criticism of the type theory is that it leads to a partial and one-sided view of personalities. Even if a number of persons are at an extreme of some trait, according to the conception conveyed by diagram III of the last figure, to designate them as "introverts," "schizoids," "rationalists" or what not, tends to hide the other important differences that may exist among them. An "introvert" may be bright or dull, ambitious or lazy, altruistic or self-seeking, hence to label him merely an "introvert" without consideration of his other characteristics

conceals significant facts and hinders a real understanding rather than to assist it.

The only justification that may be found for the concept of types lies in its application to a small minority of persons who have acquired fixed habits of adjusting by one or another of the mechanisms that have been described in the preceding chapters. If some aspect of the personality of such an individual has become so variant that it is conspicuous to all observers, and so important to him that it prepotently influences all of his adjustments, then there is some convenience in referring to him as belonging to a certain "type." In line with this suggestion, the *compensating*, *rationalizing*, *egocentric*, *withdrawing*, *fearful*, *hysterical* and *nonadjustive* types might possibly be defined. Great care must be taken, however, not to fall into an error of confusing cause with effect. If a person persistently shows withdrawing behavior in all kinds of adjustive situations, this is not because he natively belongs to a withdrawing or introvertive type, but because his experiences and training have taught him to utilize the form of adjustment that he shows, rather than other varieties. Descriptively, then, this last notion of types has a certain limited value, but it is not an explanatory concept.

Personality Traits. One of the more valuable outcomes resulting from the discussion aroused by the doctrines of personality types has been the attempt to describe and measure the various *traits* or components of human personality. The concept of personality traits is necessitated by the two objections to the type theories that have already been cited, namely that each "type" is only a partial description of personality, and that the differences represented are really quantitative rather than qualitative. In describing personality in terms of its traits or aspects the first procedure is to enumerate the chief components to be distinguished, and the second step is to devise ways of measuring each separable part. The principal shortcoming of this method is that inventories of traits are likely to be arbitrary, omitting some elements and including others that overlap and duplicate each other. Another fault

is that a piecemeal analysis may fail to give proper weight to the integration of traits and the essential modifying influences that one trait exerts on others.

The inventory of traits of personality given by F. H. Allport (1924) is representative of the best of the more concise lists. He defines traits of personality as "groups of characteristic reactions based upon native constitution and systems of habit, and selected for observation as exhibiting the typical adjustments of the individual to his environment." Allport's list, which he accompanies with extended descriptions of each category, is as follows: [1]

TRAITS OF PERSONALITY

1. *Intelligence*
   - Problem-Solving Ability
   - Memory and Learning Ability
   - Perceptual Ability
   - Constructive Imagination
   - Special Abilities
   - Soundness of Judgment
   - General Adaptability

2. *Motility*
   - Hyperkinesis — Hypokinesis
   - Impulsion — Inhibition (Control)
   - Tenacity
   - Skill
   - Style

3. *Temperament*
   - Emotional Frequency and Change
   - Emotional Breadth
   - Emotional Strength
   - Characteristic Mood
   - Emotional Attitude

4. *Self-Expression*
   - Drive
   - Compensation
   - Extroversion — Introversion
   - Insight
   - Ascendance — Submission
   - Expansion — Reclusion

[1] Allport, Floyd H., *Social Psychology*, Boston, Houghton Mifflin Co., 1924, pp. 102-103.

5. *Sociality*
   Susceptibility to Social Stimulation
   Socialization — Self-Seeking (Aggression)
   Social Participation
   Character

To these categories might be added *physique* (size, strength, health, beauty) which are also important factors in personality, as suggested by Dashiell (1928).

PERSONALITY MEASUREMENT

The Development of Personality Measurement. From early times the traits of human personalities have been estimated by three principal methods, which are that of *observing* the individual's conduct, that of *asking others* their opinions about him, and that of directly *questioning him* concerning his attitudes, beliefs and behavior. These very sensible methods of investigation have not been displaced in the course of the development of modern psychology but have only been elaborated and refined. The improvement of personality measurement has taken place principally through the application of *control* and of *quantitative treatment* of results to the three classical techniques. Most of the older errors of opinion concerning personality arose from the lack of these precautions. Casual and uncontrolled observations do not allow accurate comparison, since the situations in which various persons were studied were not made uniform. By control is meant the restriction of the conditions of observation so that only the desired factors influence the results. It also includes the important condition of uniformity, since if persons are to be compared with any validity, they must be subjected to the same stimuli and the results recorded in a consistent manner. The other chief refinement that has distinguished modern methods of personality measurement is the introduction of quantitative methods that permit the numerical comparison of individuals and the exact determination of relationships that may exist among traits.

When the refinements of control and quantitative treatment are applied to the old method of questioning, the result is the

personality questionnaire which is probably the most widely used and discussed means for estimating personality. The systematization of the common method of evaluating personality traits by asking others has yielded the *rating scale*. More exact than either of these methods is the precise refinement of observation, which has developed chiefly as the *test*. These methods, the description of which will occupy the rest of this chapter, are not new creations, but are the inevitable scientific development of procedures long used by all men in their everyday affairs. Perfection is not claimed for them, but they are markedly more effective than were the general and off-hand estimates previously employed.

The Questionnaire. One of the most natural methods of determining the personality traits of an individual is to ask him questions about his desires, experiences, attitudes, beliefs, habits and typical reactions to adjustive demands. Informal applications of this procedure are still fundamental to the study and treatment of maladjusted persons and are much used in clinical practice. For some purposes flexibility in questioning is desirable, but when persons are to be compared and when scientific rather than therapeutic use is to be made of the results, uniformity is essential. If questioning proceeds by the whim of the examiner or by circumstance, comparison is impossible and misapprehensions are likely to occur. If, on the other hand, the same questions are asked of many persons and the answers are recorded for future inspection, it becomes possible to standardize the procedure and to determine objectively the significance of certain kinds of responses. A printed series of questions which are answered by marking one of a limited number of answers, often only "yes" or "no," constitutes a personality questionnaire.[2]

The first instrument of this type to find extensive use was the *Psychoneurotic Inventory* of R. S. Woodworth (1918). At the time of the war, a need was felt for classifying men in relation to

[2] A personality questionnaire, based on the ones described in the text, is given at the end of the chapter. The reader may answer it and compare his score with those of others.

their stability of emotional adjustment, analogous to the classification in intellectual traits made by the army mental tests. Woodworth and his committee proceeded by making a list of over 200 symptoms of maladjustment, based on descriptions of cases. These were put into a yes-no question form and tried out on a group of college students, resulting in the elimination of items that were of too frequent occurrence to be significant as symptoms. The remaining set of 116 items has been the basis for most of the subsequent adjustment questionnaires. Symonds (1931) reports an analysis of the subject matter of the items of the Psychoneurotic Inventory. The principal types, with an illustration of each, are as follows: Physical symptoms, 28 items ("Do you ever feel an awful pressure in or about the head?"). Adjustment to the environment, 20 items ("Do you make friends easily?"). Fears and worries, 16 items ("Are you troubled with the idea that people are watching you on the street?"). Unhappiness, unsocial moods and conduct, 16 items ("Are you troubled with shyness?"). Dreams, phantasies and sleep disturbance, 10 items ("Are you frightened in the middle of the night?"). The remaining items dealt with reactions to drink, tobacco, drugs and sex (7), mental symptoms (6), vacillations (5), compulsions (4), and questions about one's family (4). The score on this questionnaire was the number of unfavorable answers, those supposed to be typical of maladjustment or psychoneurosis.

The chief criticism directed toward the personality questionnaire has concerned the truthfulness of the statements made by those who answer it. It must be admitted that it is possible for the subject to invalidate such an instrument by giving untruthful answers, but this objection is not nearly as serious as it seems at first. Two kinds of inferences can be drawn from answers to questions. If we ask a man his age, we make a *direct inference* that the answer is a valid one. On the other hand, if we ask an individual "Are you the victim of a nation-wide plot of persecution?" a reply of "yes" usually would lead to a conclusion that the man is deluded, rather than that the fact he states is really so. This is *indirect inference*, and is the basis of

the value of most personality measurement techniques. It should also be noted that the answers to a personality questionnaire are considered quantitatively and in bulk. It is possible for the specific answers to a few questions to be untruthful and yet for the questionnaire as a whole to convey valuable information. Woodworth found that the average score of psychoneurotic patients was 36, while the average score for normal persons was only 10 unfavorable symptoms. Data such as these indicate that the questionnaire as a whole may validly distinguish groups, regardless of the chance of truth of scattered individual answers.

While the Woodworth Psychoneurotic Inventory was a blunderbuss intended to detect maladjustment in general, a large number of questionnaires have been devised with the more specific intention of measuring a particular personality trait. Soon after Jung announced his description of the extravert-introvert "types," several workers (Laird, Marston, Heidbreder) published *introversion-extraversion inventories*, independently and almost simultaneously. Heidbreder's questionnaire (1926) is typical. It contained 54 items which were alleged symptoms of introversion, and was answered by marks of plus, minus or a question mark which indicated positive, negative or doubtful possession of the characteristic concerned. The results of the application of these extraversion-introversion studies showed conclusively that persons do not fall into types, but vary continuously from one extreme to the other.

A variation of the questionnaire technique which has stimulated much research is the Pressey *X–O Test* (1921), so called from the manner of response, which consists in "crossing out" words according to certain instructions. Two forms of the X–O Test are published. In Form A there are four parts or tests each consisting of 125 words arranged in lines of five. In Test I the examinee is instructed to cross out the words that are unpleasant to him. In Test II he crosses out words associated with key words at the beginning of each line. In Test III the words to be crossed out are the things considered wrong, while in Test IV the subject crosses out everything that he has ever

worried about. Form B is a modified version, omitting some words relating to sex that were believed to be undesirable for use with school children and omitting the second type of test which was found to be of least value. The directions and first five lines of each of the tests of Form B are as follows. In complete form each test has 25 lines, making a total of 375 items.[3]

PRESSEY X-O TESTS

(Form B)

TEST I

Directions: Read through the twenty-five lists of words given just below and cross out *everything that you think is wrong* — everything that you think a person is to be blamed for. You may cross out as many or as few words as you like; in some lists you may not wish to cross out any words. Just be sure that you cross out everything you think is wrong.

1. begging smoking flirting spitting giggling
2. fear anger suspicion laziness contempt
3. dullness weakness ignorance meekness stinginess
4. fussiness recklessness silliness nagging fibbing
5. extravagance sportiness boasting deformity talking-back

. . . . . .

TEST II

Directions: Read through the twenty-five lists below and cross out *everything about which you have ever worried, or felt nervous or anxious.* You may cross out as many or as few words as you like; there may be some lines in which you may not wish to cross out any. But be sure you cross out everything about which you have ever worried.

1. loneliness work forgetfulness school blues
2. sin headache fault-finding sneer depression
3. meanness clothes sickness looks unfairness
4. discouragement self-consciousness failure accidents worry
5. temper disease pain money awkwardness

. . . . . .

TEST III

Directions: Read through the twenty-five lists just below and cross out *everything you like or are interested in.* You may cross out as many or as few words as you wish; there may be some lines in which you will

[3] By courtesy of Dr. Sidney L. Pressey and of C. H. Stoelting Co., publishers.

not wish to cross out anything. But be sure you cross out everything that you like.

1. fortune-telling boating beaches mountains vaudeville
2. camping tennis hiking eating amusement-parks
3. Beethoven Edison Napoleon Raphael Tennyson
4. kissing flirting pretty girls talkative girls athletic girls
5. studying dancing daydreaming walking reading

. . . . . .

Instructions are then given to turn back to the tests and circle the *one* word in each line that is *most* wrong, worried about, and interesting, respectively.

The original gross scores proposed by Pressey were the *affectivity* score, which is the total number of words crossed out and the *idiosyncrasy* score, based on the number of circled words that differed from the most usual choices. The affectivity score for the whole questionnaire has little meaning, especially on Form B, but for the three separate "tests" indicates the general tendency to consider many things wrong, to worry much and to have many interests. Data indicate that "things wrong" and "worries" decrease from grade 7 to the end of college, while the range of interests increases. The idiosyncrasy score indicates the degree of individuality or "differentness" of an individual, and is a valuable observation.

Chambers (1925) and Pressey (1934) have applied the X–O Test to some other problems. By a scoring based on the words more frequently crossed out by good students and those crossed out by poor students, an estimate of "studiousness" may be obtained. By a similar empirical procedure which compares the responses of sixth-graders with college freshmen a maturity index has been devised, scores on which indicate the age-development of interests and attitudes.

Validated Questionnaires. The first personality questionnaires such as the Psychoneurotic Inventory and the earlier extraversion-introversion tests were merely lists used with the *a priori* assumption that the inherent content of the questions themselves indicated the significance of scores. More recently several methods have been used for selecting questions which

have a predictable value for measuring some defined trait. Questionnaires whose items have been pre-selected by some experimental procedure may be termed *validated* instruments of measurement. These are, in general, more trustworthy than the more subjectively assembled lists.

The *Personality Schedule* of Thurstone (1930) is one example of a questionnaire validated by an empirical method. The object of this test is the same as that of Woodworth's, namely to discover neurotic tendency or general instability. From previous lists, 600 questions were tabulated which number was reduced to 278 by the elimination of duplications. These questions were administered to 694 college freshmen and were tentatively scored by a count of the unfavorable answers as subjectively determined. The fifty freshmen making the highest (worst) scores and the fifty making the lowest scores were separated. On the assumption that the original crude test had considerable validity as a whole, these groups may be termed the "maladjusted" and the "well-adjusted." Items were then evaluated by comparing the answers given by the two groups. The most significant question was found to be "Do you often feel just miserable?" which was answered "yes" by 80 per cent of the maladjusted group and by none of the well-adjusted. On the other hand, many items, for example "Did you ever have the habit of biting your finger-nails?" were found to be of no significance since they were answered in substantially the same manner by the two divergent groups. In all, 55 items were so eliminated, leaving 223 questions that were proved to be of some discriminative value, as the content of the final form. This method of selecting items may be termed that of *internal consistency*, the questions being retained that agree most satisfactorily with the test as a whole. In applying the Personality Schedule to college students Thurstone found that intelligence had no relationship to "neurotic tendency," but that the less well-adjusted tended to get slightly higher academic grades. Women showed more symptoms than did men. Freshmen who subsequently were pledged to fraternities were found to be slightly better adjusted, on the average, than those who were

not. No difference was found between Jews and Gentiles, an interesting result in view of the common opinion that Jews are more "nervous."

The Willoughby *Emotional Maturity Scale* (1931) was validated in a different manner. This questionnaire consists of sixty descriptions of situations and responses involving emotional attitudes. In answering it, the subject checks those items that represent his characteristic behavior. A score value for each item is high or low (from 1 to 8), depending on the degree of emotional maturity shown by the conduct described. The sum of these item scores is the measure of the trait. To determine the score values, Willoughby had 101 judges rate the items in terms of the maturity of behavior represented. This is validation by *consensus of opinion*, often a useful method but subject to the usual errors of subjective judgment.

The Allport *Ascendance-Submission Reaction Study* (1928) is another validated questionnaire of importance. Ascendance is defined as the tendency to dominate one's fellows in various face-to-face relationships of everyday life, submission being the opposite characteristic of being dominated. Since men and women face rather different kinds of situations in relation to this trait, separate questionnaires are provided for the sexes, the form for men having thirty-three items, that for women thirty-five. The questions are in multiple-choice form rather than of the more usual yes-no type. A typical item is: "15. Have you haggled over prices with tradesmen or junk men? frequently ——, occasionally ——, never ——." The most typical response is checked. The Ascendance-Submission Study was validated against an *external criterion*. Each of a group of students who had taken a preliminary form of the test was rated, once by himself and four times by classmates, on his ascendance-submission qualities. The average of these ratings was taken as a criterion of his status in this trait. The answers marked by the more ascendant persons were then given varying positive values, the answers typical of the otherwise determined submissive students receiving negative weights. In this way

opinion was largely eliminated from the decision as to what the responses meant.

The Bernreuter *Personality Inventory* (1931) is a questionnaire designed to measure four personality traits named as "neurotic tendency," "self-sufficiency," "introversion-extraversion," and "dominance-submission." It consists of 125 questions answered by "yes," "no," or a question mark, the appearance of the blank being similar to the Woodworth and Thurstone questionnaires. Noting the apparent overlapping in content among questionnaires measuring these various traits, Bernreuter composed items relating to all of them, which were administered to a group which also had taken the Thurstone Personality Schedule, a Bernreuter Self-Sufficiency Test, the Laird Introversion-Extraversion questionnaire and the Allport Ascendance-Submission Reaction Study. Keys were made to measure four traits in such a way that the scores obtained corresponded to those made by the same persons on the four original tests. This method of construction may be termed validation by *comparison with other tests*. The correlations found between the traits are interesting. "Neurotic tendency" and "introversion" were found to be practically synonymous. "Introversion" and "submission" had much in common. "Self-sufficiency" was the most independent trait, but was somewhat related both to "extraversion" and to "dominance." These correlations serve as a warning that independent personality traits cannot be distinguished merely by giving them different names and theoretical definitions. Many personality tests that purport to measure different traits really overlap in suprising degree.

Factor Analysis in Questionnaire Construction. The determination of entirely independent characteristics of personality has been achieved by means of the technique of factor analysis, devised principally by Thurstone (1931) and Hotelling (1933). To discover the true components or traits of personality by this method, the necessary steps are to secure answers to a large number of questions and then to note the grouping of items by means of correlations. Traits that are related or independent

are thus distinguished and scoring keys can be made to measure the independent components disclosed.

Flanagan (1935) applied the factor analysis method to the 125 items of the Bernreuter Personality Inventory. He discovered that scores on it were due to four independent factors, not at all the same as those designated by Bernreuter's keys. Two of these factors accounted for about 96 per cent of the variation in scores, the others being of negligible weight. By examining the questions most indicative of these two important factors, Factor I was tentatively designated as *Self-Confidence* and Factor II as *Sociability*. "Extraversion," as previously defined, was found not to be a pure trait, but to consist principally of "self-confidence" with an appreciable weighting of "sociability" and a small proportion of the other two undefined traits. Factors I and II are entirely independent, which means that a person having a given degree of self-confidence may show any degree of sociability, high, average, or low.

The method of factor analysis, although impossible to explain in non-technical terms and laborious to use, probably holds the key to progress in personality measurement. It shows that the proper procedure is to discover the existence of independent traits and to explore their nature, then to name them afterward. This is just the opposite of the old logical method which started with a dogmatic definition of the trait. Only by rigorous mathematical methods such as this can the real elements of human personality be distinguished with precision.

Association Methods. A method of personality study older than the questionnaire, which contains desirable elements of both flexibility and precision, is the *word association experiment.* This technique was first used for its present purposes by Jung (1910) and is widely employed by other psychoanalysts, although its more objective aspects have been developed principally by psychologists. The method of application is to read a list of words to the subject who responds to each stimulus by saying the first word that occurs to him, as quickly as he can. A record is made of the word responses and of the times taken

for replying. It may be seen that the association test, like the questionnaire, is an offspring of the simple interview. A considerable number of lists of words have been proposed of which the most used are Jung's (adapted in English by Eder, 1918) and that of Kent and Rosanoff (1910). Each consists of 100 words, of which the first twenty are given here.

JUNG AND EDER LIST			KENT AND ROSANOFF LIST		
1. head	8. make	15. dance	1. table	8. eating	15. short
2. green	9. woman	16. village	2. dark	9. mountain	16. fruit
3. water	10. friendly	17. pond	3. music	10. house	17. butterfly
4. sing	11. bake	18. sick	4. sickness	11. black	18. smooth
5. dead	12. ask	19. pride	5. man	12. mutton	19. command
6. long	13. cold	20. bring	6. deep	13. comfort	20. chair
7. ship	14. stalk		7. soft	14. hand	

These two lists are intended for somewhat different purposes. Jung's words are designed to call up a maximum of individual experiences, and hence to detect emotional attitudes or so-called "complexes." Unusual responses are noted and followed up by informal questioning, often yielding clues of individual diagnostic value. Another important indicator of an emotional response is an excessively long reaction time which the subject may report as due to a "blank mind," to competition between several responses occurring simultaneously, or to a need for concealing the word first recalled. A general tendency to long reaction times is alleged to be indicative of general emotional maladjustment. Other signs of disturbance include failure to respond, making an irrelevant response, misunderstanding the stimulus word, repeating a response previously given, saying a sentence or phrase rather than a word, desiring to change the response after having given it, and also laughing, gasping, fidgeting, or any other external sign of emotion or embarrassment.

The Kent-Rosanoff method and its developments have stressed a different aspect of word association, namely the classification of the kind of response given. Their list was constructed so as to avoid words of strong personal significance, a procedure exactly opposite to that of Jung. By administering the list to one thousand normal persons, Rosanoff compiled

tables of "common responses," there being a limited range of replies to any one word among the subjects. About 92 per cent of the responses of normal subjects were found to be common, while 247 insane subjects gave only 71 per cent of common words. This difference shows a tendency of the insane toward atypical habits of thinking, but the method failed to be a conclusive test of serious mental disorder. Another attack is to classify the word responses according to their logical relationships with the stimuli. It has been found that some persons have more than average tendencies to name opposites, synonyms, part-whole relationships or other special forms, and that these trends are fairly constant for a given individual over a period of time.

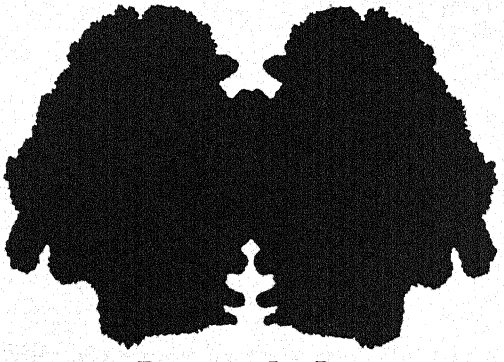

FIG. 20. AN INK-BLOT

This is not one of the original Rorschach ink-blots, but was made by the author according to the same principles. What do you see in it?

They do not seem, however, to pertain to any very important personality differences. Jung himself investigated another variety of response distinction, between "objective" responses such as "snake-frog" which related to external things, and the "subjective" responses such as "snake-poisonous" which concerned the individual's personal evaluation of the stimulus. Jung thought that he detected objective and subjective "association types," but the variation in the number of personally related responses is a continuous one.

A provocative variation of the free association technique is the *Ink-Blot Test* of Rorschach (1924). The material consists of a series of ten ink-blot patterns printed on cards, five of

which are in colors. (Fig. 20.) A card is given to the subject and he is allowed to comment freely on it, telling what it reminds him of, what forms he sees in the vague pattern and anything else that occurs to him. The responses are usually recorded verbatim. The interpretations of the subject are examined to note the manner of interpretation, the quality underlying the response (form, color or movement), the content of the response, and its degree of originality. Objective tabulations are then made of the number, percentage of occurrence, and comparative frequency of such interpretations as those based on wholes, on details, on color, on the inference of movement and those relating to humans, animals, and anatomical details. Many interpretations are made on the basis of these scores, such as that the predominance of "movement" interpretations over "color" responses is typical of introversion. Rorschach's original instructions for the use of the test are vague and his interpretations markedly subjective. He seems to have claimed more for this test than it deserves. Some other research shows that the technique is not without merit, however. Hertz (1934, 1935) has shown, by comparing scores based on five ink-blots with those computed from the other five, that the test is capable of yielding reliable numerical scores. She also reports significantly high relationships between such questionnaires as the Woodworth and the Allport, and the corresponding scores based on the Rorschach test. The value of the ink-blot technique, like that of free association, lies in the fact that it discloses some of the trends of a person's thinking and samples his typical habits of response. With further development, this method promises to be a useful one.

Rating Scales. The rating scale is a device for systematizing and improving the expression of opinion concerning a personality trait. Ratings may be made by teachers, associates or other observers or by the individual himself. In self-rating, the individual estimates his own status in the trait defined, the purpose being the same as that of a questionnaire. Two examples of rating items of the "graphic" type from the

Carnegie Institute of Technology "Scale for Self-Rating" (1921) are given below.

7. Are you always at ease or are you self-conscious?

I am always at ease	I am seldom flustered by actions or remarks with reference to myself	I am self-conscious on occasions	I am frequently embarrassed	I am painfully self-conscious and ill at ease; very sensitive

8. Are you impulsive or cautious in making decisions?

I always act on the spur of the moment	I am impulsive, always make prompt decisions	I show moderate deliberation	I am cautious, deliberate and considerate	I am extremely wary and hesitant; act only after careful consideration

The scale is used by placing a check mark above the correct answer, or if the rater considers the trait to be shown in a degree intermediate between the descriptions given, he may check between answers. The result of a rating is reduced to numerical form by measuring the distance of the check mark from one end of the line.

A single rating has been found to possess no great reliability, serious differences frequently appearing between the ratings given by persons who know the subject equally well. This unreliability may be overcome either by taking the average opinion of a number of raters, or by combining scores for a number of rating items which concern the same trait. Symonds (1931) has shown that the combination of the opinions of eight qualified raters is necessary in order to achieve a reliability suitable for individual diagnosis. Using the other method of increasing reliability, Laird (1925) used a series of rating items all concerning extraversion-introversion, the sum of which was taken as a score. When so combined, a homogeneous set of ratings has greater reliability than the same number of "yes–no" questionnaire items. The reliability of a rating also varies somewhat with the trait being estimated. Teachers can rate

the "scholarship" of their students more reliably than they can rate "persistence" or "impulsiveness," probably because they have more definite observations on which to base their opinions in the case of the former trait. A tendency for most persons to rate themselves higher on desirable traits than others rate them has also been discovered.

An example of a well-prepared rating scale for personality traits is the Haggerty-Olson-Wickman *Behavior Rating Schedules* (1930). This blank consists of two parts which use different forms of rating procedure. Schedule A contains a list of fifteen common behavior offenses of school children which are rated by checking one of four statements: Has never occurred; Has occurred once or twice but no more; Occasional occurrence; Frequent occurrence. Numerical scores are calculated by assigning values to the degrees of occurrence, the behavior problems that teachers consider more serious receiving larger scores. The sum of these values gives a quantitative estimate of how bad a behavior problem is presented by the child rated. Schedule B consists of 35 rating items, divided into four sections which deal with intellectual, physical, social and emotional adjustment. Rating is at first made by checking a descriptive phrase, then the ratings are turned into numerical values that were experimentally determined. Standards based on the ratings of a large number of children are given, so that the comparative status of a child can be determined. Although far from perfect, the Behavior Rating Schedules constitute about the best present instrument for a survey of the adjustive difficulties of school children.

OBJECTIVE METHODS IN PERSONALITY STUDY

The third method of personality study, in addition to questioning and rating, has already been named as that of *observing* the individual's conduct. As in the case of the other two methods, psychological research has refined the process of observation and has rendered it a more exact instrument of measurement. Everyone observes the behavior of his fellow men,

but the conclusions drawn are often full of errors because of failure to take the necessary precautions. Exact methods of observing have developed into two techniques, a simpler one which may be termed *directed observation* and a more controlled method which is called a *test.*

Directed Observation. Errors in ordinary observation are due to failure to observe or control all conditions contributing to a phenomenon, to confusion which results from attempting to observe too many things at a time, from the unreliability of trying to remember a series of observations without immediate records, and from the tendency to draw conclusions from general impressions without proper analysis of the results. Modern developments in methods of observing have been especially effective in remedying the last two faults named. The fundamental principles of effective observation are to *record behavior fully while it is being observed* and later to *analyze, tabulate and express quantitatively* the results so that the most appropriate conclusions can be discovered. It is also important not to make interpretations while the observation is in progress, and to avoid prejudice by ruling out any foregone conclusions.

An example of an observation technique applied to a personality problem is the study made by Olson (1929) on the occurrence of certain "nervous" habits in normal children. Olson observed children for five-minute and ten-minute periods on successive days, making from ten to twenty such observations. The incidence of such behaviors as sucking the thumb, biting the nails, twisting the hair, rolling the head and so forth, was tabulated. It was determined that these habits were quite consistent in a given child, and that the reports of the observer made from time to time showed a reliable degree of uniformity. A large number of relatively short observations at well-spaced intervals was found most suitable.

Another variety of precise observation was reported by Barker (in Thomas, 1929). The social contacts of pre-school children on a playground were recorded, one observer being employed for each child. The youngster's path about the playground was recorded by drawing on a ground-chart, with

all occupations recorded as to their nature and the time devoted to them. An analysis of these data showed that reliable conclusions could be drawn concerning the amount of activity that each child directed to himself, to social contacts and to material objects. Considerable individual differences were shown, some children, even at the age of two to three years, showing pronounced tendencies to social participation, while others were more interested in materials.

The value of directed observation is that it provides an exact and quantitative method of describing conduct in relatively uncontrolled situations, where the child is free to "be himself" and to do what he wishes. The extension of this technique to older children and adults will gather important data on the variation of traits of personality.

Tests of Intellectual Traits. When in addition to careful recording and numerical treatment of results, the condition of the precise control of the situation presented to the individual is imposed, the result is a *test.* The psychological field in which tests were first successfully developed is that of intellectual traits. Although lacking perfection and often misinterpreted or misused, the "intelligence test" or scale of intellectual tasks is one of the striking achievements of modern psychology. "Intelligence" is often discussed as if it were something different from "personality," indeed the two are sometimes contrasted. This is a serious error, for intellectual traits are components of the total personality and important ones. No psychological clinic would think of studying or treating a case of maladjustment without making some effort to ascertain if the individual concerned is bright, of average ability or stupid. Mental tests, properly used and interpreted, provide the most effective means for making this judgment. Since the field of mental testing is a well-developed one, an adequate account of it requires a volume in itself. Only the most general principles and a few precautions can be mentioned here.

Three principal varieties of mental tests may be distinguished: individual verbal tests, group tests and performance tests. The *individual verbal test* is a series of carefully controlled

tasks presented individually to the subject by means, chiefly, of oral questions. This type of test was first devised by Binet and Simon, and is frequently called the "Binet Test" as a short designation. The questions presented demand that the subject discriminate, judge, remember and reason, which are typical intellectual tasks. By means of elaborate experimental procedures, each item or task has been assigned an age-value which designates the age at which the average child has developed the ability to answer the question successfully. This underlies the concept of Mental Age (M.A.). If a given child can perform the ten-year tasks but no more, he has a mental age of ten, regardless of his chronological age. The amount by which a child's mental age exceeds or falls below expectation for his age is indicated by the Intelligence Quotient (I.Q.), which is found by dividing the M.A. by the chronological age. Obviously, I.Q.'s over 100 indicate a degree of intellectual ability above average in varying degrees, those below 100 are below the absolute average. Intelligence quotients are usually interpreted as follows.

I.Q.		Per cent of School Children in This Group
above 130	"Gifted"	1
120–130	Superior	5
110–120	Above average	14
90–110	Normal	60
80– 90	Below average	14
70– 80	Inferior	5
below 70	Very inferior, possibly "feeble-minded"	1

On *group mental tests*, the intellectual tasks are presented in printed form, the subject responding to questions by underlining, writing a brief answer or by similar pencil and paper procedures. The items of a group mental test are carefully selected by experimental procedures of validation, so that the results correspond to other indications of intellectual merit, such as school success. Group tests are interpreted by comparing the subject's score with those of others. By determining the scores made by the average child of various ages, mental ages and hence intelligence quotients may be computed from group tests.

The value of verbal and group mental tests rests solely on their indication of the ability of the individual to deal with linguistic and abstract materials of the kind presented. They predict success in school with reasonable accuracy and are related to success in the aspects of clerical or professional occupations which involve handling language, concepts and ideas. In the early days of mental testing overenthusiastic proponents of the method incorrectly ascribed delinquency, poverty and maladjustment chiefly to lack of intellectual adequacy, which statements are unjustified in the light of further research. One of the chief shortcomings of the verbal types of tests, which is becoming more and more recognized, is that they depend on literacy and hence on environment and schooling to a considerable degree. This type of test, either individual or group, cannot be interpreted to show mental defect in persons such as the foreign-born who have a serious lack of ability to understand the language in which it is prepared. Tests given to adults who are not accustomed to verbal or numerical work or to abstract thinking in their occupations are likely to be misinterpreted.

Attempts to overcome the language factor in the estimating of intellectual traits have led to the development of *performance tests*. In this type of test the basic intellectual functions of remembering, problem solving, seeing relationships and judging are measured in non-verbal situations. The instructions may be given by signs or gestures in many cases, and the responses are made by moving blocks, by marking pictures, by placing inserts in form or picture boards, by finding the way through a maze, by imitating a sequence of movements, and by similar performances that do not involve the use of language. Performance tests have been standardized by experimental methods, so that numerical scores and comparisons may be made. Their use is indicated whenever doubt exists as to the normality of the language background of an individual, or when a thorough study of his intellectual characteristics is desired. When an "intelligence rating" is given in a case history, it is of utmost importance to know the kind of a test from which it was obtained. All mental tests are not of equal merit, and an "I.Q."

of unspecified origin is woefully lacking in meaning as an item of information about a personality.

Social Development Scales. The success attained in measuring intellectual abilities in terms of maturity or age units has led to a number of attempts to estimate other personality traits in the same way. This is a very valuable line of approach for, as will be developed more fully in a later chapter, failure of normal progress in adjustive habits is one of the most conspicuous determining factors of adequate or inadequate personality. A broad trait classification to which the concept of progressive growth has proved applicable is that of *social development.* It may be noted by ordinary observation that the social adjustive abilities of children increase with age, although many persons may be accelerated or retarded in relation to the average expectation of progress. A "social development age" should offer an indication of the degree of development of social traits, just as the "mental age" indicates development of abstract, linguistic and intellectual traits.

One approach to the study of social maturity has been made by Furfey (1930) by means of his *Developmental Age Test.* This test consists of a series of printed questions suitable for group administration which concern the recreational interests, attitudes, desires, and ambitions of the child. The six sub-tests which comprise the scale are headed: Things to Do; Things to Be When You Grow Up; Books to Read; Things to Have; Things to See; and Things to Think About. The 196 items were selected on the basis of their ability to distinguish between younger and older boys, and on their correspondence to ratings of social maturity. Standards based on 450 boys permit the results to be expressed in terms of "developmental age." Since the social maturity of children is more clearly expressed by their interests and attitudes than by their school accomplishment, developmental age is believed to be a better measure of general adjustive progress than is mental age. The fact that the interests measured by the developmental age tests are very largely determined by physique and by social and environmental influences does not detract from their value in measuring adjustive maturity.

Preliminary experiments toward the standardization of an individual social maturity scale have been made by Doll (1935). His *Vineland Social Maturity Scale* consists of 117 items indicating progress in social maturity from below one year of age to above average adult status. The "social age" is determined by the number of items passed, the standards having been found by examinations of children of various ages and of adults. A few items with the approximate ages at which the degree of maturity indicated is achieved, on the average, follow.

Age six:	Goes to school unattended
	Bathes self, assisted
Age eight:	Disavows literal Santa Claus
	Is trusted with money
Age ten:	Writes occasional short letters
	Uses tools or utensils
Age twelve:	Goes about home town freely
	Does small remunerative work
Age fourteen:	Plays difficult games
	Engages in adolescent group activities

There is considerable need for the standardization of tests which will use the concept of maturity in estimating the more important emotional and adjustive tendencies of individuals. This is a promising field for research in personality measurement.

Some Indicators of Inadequate Personality. In the course of years of experimentation with mental tests of various kinds, a number of observations have been made which offer some evidence concerning the usual characteristics of inadequate personalities. Most of these findings have been incidental observations at first. In studying the results of a test devised for one purpose, facts are sometimes discovered that have a significance quite different from that which was originally intended. Studies of this type are fragmentary as yet, and afford only an incomplete picture of the inadequate personality. Most of the tests to be described have suggestive rather than conclusive value. They hint, rather than prove, the existence of predispositions to maladjustment.

One observation is that maladjusted or "emotionally unstable" individuals are likely to be erratic in their performance on mental tests. This is often manifested as *scatter* in intelligence test results. Scatter consists in the ability to do some test items that are usually difficult combined with failure on some tasks that are usually easy. When tested with an individual mental test of the Binet type, a person should, in theory, be able to pass all of the tests up to the level which indicates his mental age, and should fail all tests that are harder than this level. In practice this seldom occurs, it being usual for passes and failures to be spread over a range of about three years. Thus it is common for a normal child whose mental age is nine to fail an item or two at the eight-year level and to pass some items standardized at mental age ten. It has been found that the items passed by maladjusted or unstable persons show this tendency to scatter in an exaggerated degree. Although an absolute standard is impossible, scatter through five year levels is usually regarded as a suggestion of instability. The explanation of this involves only a common sense view of the situation. The emotionally unstable person's conduct is determined by other than rational considerations. He "gets rattled" easily when certain tasks are presented and hence fails some things that, with a calm approach, he might have done successfully.

Similar in interpretation is the observation that a *fluctuation of I.Q.* often indicates instability. In general, the ratio of mental age to age remains reasonably constant throughout the growth period. When a child is retested on successive occasions with the same good individual mental test, the I.Q.'s found should vary only within narrow limits. Absolute constancy seldom occurs, due to the lack of perfect reliability of the test, but the average variability is about four points of I.Q. In contrast, Wells (1927) reports the case of a boy who on five successive administrations of the Binet test, at ages from four years to ten years, received I.Q.'s of 100, 73, 84, 90 and 95 respectively. He was described as distractible and impulsive, overactive, disobedient and badly "spoiled." He had been apprehended in several delinquencies and had run away from

foster homes five times. His mentality was undoubtedly normal, but various transient emotional upsets had lowered his level of performance at some of the testings. It is interesting to note that on the last test this boy showed scatter through five year levels.

A word of warning should be given that "scatter" and "fluctuating performance" do not always have a pathological significance and can be caused by some other factors than instability of personality. A regular test performance does not exclude the possibility of maladjustment, and an irregular one does not always indicate it. This is particularly true if the examinations have been given by insufficiently competent examiners. If scatter occurs because of failure on easy items that are similar in content, special handicaps such as those of vision, of hearing, of reading ability, or of language training may lie at the root of the difficulty, rather than emotional instability.

Reactions to Speed Pressure. Another observation concerning maladjustment that arose from mental tests seems first to have been suggested by Plant (1926). He gave two different versions of the Binet tests to a number of children, the Stanford Revision of Terman (1916) and the Kuhlmann Revision (1922). Both tests are made on similar general principles, being age-level scales of intellectual abilities. It was found, however, that for normal children the Stanford and Kuhlmann mental ages were nearly identical, while for maladjusted persons, the Kuhlmann scores ran about ten per cent behind the Stanford. This discrepancy is most probably due to the *speed factor* in the Kuhlmann tests. The tests of the Stanford Revision contain few items in which the subject is obviously timed, in which he feels that he has to do his best very quickly. In Kuhlmann's tests, on the contrary, no fewer than 14 of the 25 different tests that lie at the level of mental age nine or above involve conspicuous timing with a stop watch, the time being an important element in determining the individual's rating. This observation suggests that the emotionally unstable person is unable to work well under the pressure of speed; he "breaks down" when rushed. This factor may make a great difference in test ratings.

Wells (1927) describes a young woman who secured an I.Q. of 88 on the Stanford Revision of the Binet Tests with a scatter through five year levels (note the previous observation), but who received an I.Q. of only 64 on the Kuhlmann revision. She was noted as unstable in behavior, with temper outbursts, much quarreling and threats of suicide. She was normal in mentality,

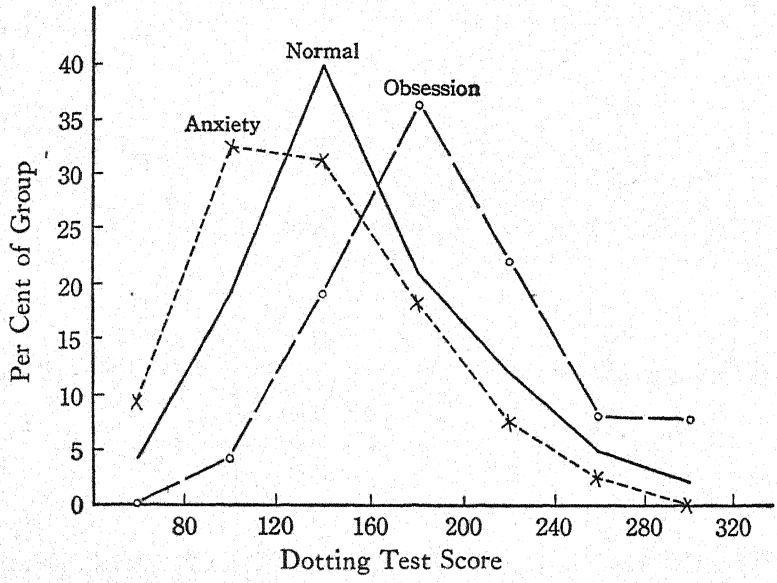

FIG. 21. REACTIONS OF NEUROTICS TO SPEED PRESSURE

The horizontal axis indicates the maximum speed attained before "breakdown." The persons with obsessional symptoms made the best scores, normal individuals next best, while those with anxiety symptoms were, as a group, unable to speed up their performance. (Drawn from data given by Culpin, 1931.)

but unable to make the adaptation to speed pressure that the Kuhlmann tests demanded.

Essentially the same observation was made by Culpin (1931) through the use of a very different technique. In examining a large number of factory workers in a mental hygiene survey, he used the McDougall Dotting Test, at first as a test of motor skill. This test consists of a slowly revolving disk which brings a succession of small, irregularly placed circles to view under a slot. With a pencil, the subject aims a dot at each circle as it appears. The speed of appearance of the dots is constantly

accelerated, so that the subject has to work faster and faster throughout the test. A score used was the number of circles aimed at before "breakdown," which was defined as missing five circles in succession. A surprising relationship between this test and certain psychoneurotic symptoms was found. A very significant average difference was discovered between normal subjects and those suffering from severe symptoms of anxiety. Workers showing obsession symptoms, in contrast, made better scores than normals, probably because of their tendency to narrow concentration of attention. As Figure 21 shows, this test is not individually diagnostic, since the groups overlap so greatly, but the average differences are striking. It indicates, as does the preceding observation, that unstable persons, in general, cannot stand being pushed or goaded in a task.

Impulsiveness and Control. A common case observation concerning maladjusted personalities is that they tend to be impulsive and to lack foresight and control. Several objective psychological tests suggest the verification of this.

An outstanding psychometric achievement which has value in diagnosing foresight and control is the Porteus *Maze Tests* (1924, 1933). These tests consist of a series of mazes through which the subject has to find his way with a pencil. (Fig. 22.) In the first place, the mazes are age-level performance tests of general mental ability, and marked correlations are found between age ratings obtained from them and mental ages determined by the Binet tests. The method of administration of the Porteus tests, however, places a high premium on foresight, planning and the avoidance of impulsive acts. The subject is not permitted to solve the maze by motor trial and error, but fails a given trial the instant he enters a blind alley. The individual who acts before he looks and thinks is severely penalized. The writer has had several cases of young adults who have secured normal or superior ratings on other tests, but who have scored only from the eight- to the eleven-year level on the mazes. Invariably these have been persons whom case study characterizes as impulsive, unstable or maladjusted. This observa-

tion is verified by those of others. Porteus has found that the maze tests will predict "social adaptability" among higher grade feeble-minded individuals more reliably than will the Binet tests. Although largely determined by general mental

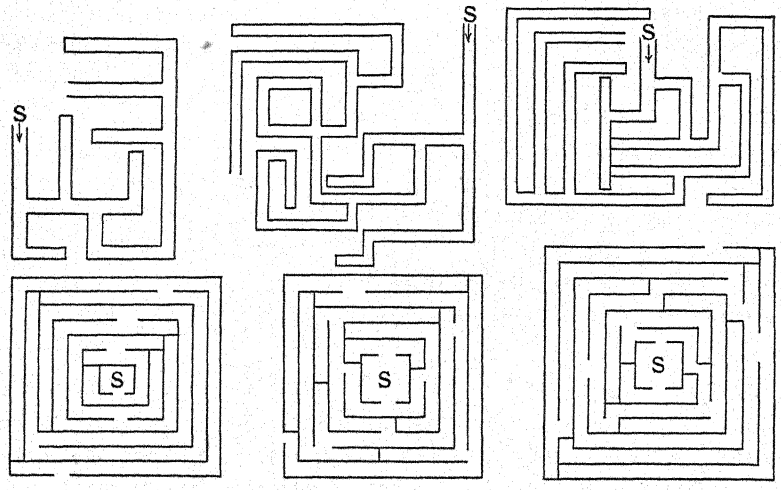

FIG. 22. PORTEUS MAZE TESTS

The maze tests for Years 8, 9, 10, 11, 12, and 14 are reproduced. The originals actually used in testing are much larger. The subject starts at *S*, and finds his way out. (Courtesy of S. D. Porteus and of the C. H. Stoelting Co.)

level, the maze tests are somewhat specific for planning ability and foresight and therefore more related to adjustive capacities.

Another approach to the measurement of the qualities of inhibition and control was made by the so-called *Will-Temperament Tests* of Downey (1923). These much-discussed tests measure various aspects of motility chiefly through the use of handwriting as a well-automatized motor habit. Twelve traits are supposed to be measured, of which a few examples will be given. A trait designated as "motor impulsation" is defined as consisting of impetuosity, energy of reaction and ease of overcoming inhibition. It is measured by comparing the quality of writing done normally with that done under distraction, as with eyes closed or while counting. Persons having greater "motor impulsation" write larger and faster under distraction; those with a lesser degree of the trait write more slowly and make

smaller letters. Another trait, "flexibility," bears the important definition of "ease and success in readjustment; capacity to modify one's routine reactions." It is measured by the speed and completeness with which the subject can disguise his handwriting. "Volitional perseveration," or persistence at a task, is measured by the length of time the individual will spend practicing disguising his handwriting. "Motor inhibition" is the ability to slow down movement, involving control and patience. The Will-Temperament Tests were widely acclaimed on their publication, but enthusiasm has waned with the passage of time. They measure an interesting set of individual differences, but great doubt exists as to the general applicability of results obtained on so limited a sample of behavior. A person who shows great persistence or control in the special test situation does not necessarily show the same quality in all of his everyday adjustments. In spite of this criticism, claims have been made of the discovery of significant differences between normal persons and those who are maladjusted or delinquent. The Downey tests remain an interesting experimental procedure, but not of sufficiently proved merit for clinical use.

Fernald (1912) reported a test which is claimed to measure "will-power," "spunk" and persistence in continuing a disagreeable and fatiguing task. The subject stands on a small platform on the balls of his feet, with heels off the floor. An indicator beneath his heels shows any tendency to put them down, and when he finally rests his heels, the ringing of a bell signals the termination of the test. Contrary to one's first impression, this test has been shown to depend, not primarily on physical strength, but on the ability voluntarily to endure discomfort in order to make a good rating. Fernald found a group of normal youths to remain off their heels from 12 minutes to 2½ hours with an average of 36 minutes. A group of boys in a reform school ranged from 2½ minutes to 53 minutes with an average of 15 minutes. The chief trouble with this test is the excessively long time it takes to administer, which prevents it from being useful in most practical work. Bronner (1914) reported a similar test involving holding a pair of dumb-bells at

arm's length, which could be performed in less time but which gave similar results. The lack of willingness to endure discomfort has been found to be a characteristic of inadequate personalities.

Studies of "Character" Traits. Extensive studies of an important series of personality traits coming within the popular definition of "character" have been reported by Hartshorne and May (1928, 1929, 1930). These researches devised methods of measuring cheating, stealing and lying and also of co-operativeness, self-control and persistence, among normal groups of school children. Cheating, for example, was measured by providing opportunity for the pupil to cheat in scoring his own test paper with the belief that he would not be detected. Comparison with an equivalent test on which cheating was impossible disclosed the cheaters with sufficient accuracy for research purposes. Co-operation and charitable behavior were measured by various actual unselfish acts for which situations were provided. Self-control was judged by measuring persistence at unpleasant tasks, and by noting the degree of resistance to various attractive distractions while working to make a good score. Some of the tests devised are useful for individual personality diagnosis, but most of them are too lengthy or else require the presence of a group.

Hartshorne and May's research was principally concerned with the discovery of the antecedents of the character traits measured and with the effectiveness of character education. Cheating in school was found to be greatly conditioned by intelligence, the brighter children cheating much less than the dull, probably because they did not have to do so to succeed. The other traits investigated were not appreciably associated with mental ability. The one constant factor that influenced all traits in large degree was that of home background and the example of parents. Church and Sunday School attendance, religious and nationality differences, motion picture attendance, and many other factors studied were little related to the character traits in question. These researches have been of greatest value in demonstrating the method for an objective attack on

personality problems and in disposing of a number of unfounded beliefs concerning character.

The Promise of Objective Studies. The application of objective techniques of measurement to the study of personality traits has not progressed far, but has already made valuable contributions. The maladjusted person is revealed as one who, in general, is retarded in social development, is erratic in intellectual performances and is unable to work efficiently under pressure. He tends to lack foresight and self-control, to be impulsive and to be unable to endure discomforts. Not every inadequate personality shows all of these characteristics, of course, and some of them may prove on further research to be less clearly distinguishing factors than they appear to be at present. The picture is a consistent one, however, and may be taken as a true representation of at least some of the traits of the inadequate personality. Further applications of experimental methods and of objective measurements promise to disclose the fundamental characteristics of personality that are the chief predisposing causes of maladjustment.

PERSONALITY QUESTIONNAIRE

Directions: These questions concern certain personality traits. Answer by indicating what your usual attitude is, or what your usual conduct would be in the situation described. There are no "right answers." Give the most truthful statement that you can about yourself. Answer *every question.* Reply "yes" or "no" by *drawing a circle* around the one that indicates your answer. Circle the *yes* when you mean "yes," the *no* when you mean "no."

TYPE S

1. Are you stimulated to try harder by observing successful people? ..... Yes No
2. Can you understand a problem better by discussing it with others than by studying it alone? ..... Yes No
3. In a difficult situation, are you willing to take a chance alone? ..... Yes No
4. When you feel "blue" do you try to find someone to cheer you up? ..... Yes No
5. Do you like people to come to call on you when you are ill? ..... Yes No
6. Do you enjoy spending an evening alone? ..... Yes No
7. Do you prefer to make your plans alone rather than with others? ..... Yes No
8. Do you like company when you are feeling sad? ..... Yes No
9. Do you prefer to share your responsibilities with other people? ..... Yes No
10. If you see an accident, do you stop and try to be of assistance? ..... Yes No
11. Do you like to be with people a great deal? ..... Yes No
12. Do you make most of your decisions alone? ..... Yes No
13. Can you keep at a tiresome task without supervision or encouragement? ..... Yes No
14. Are you conservative in your social and political beliefs? Yes No
15. Do you usually seek help when you are in trouble? ... Yes No
16. Do you prefer to work with others? ..... Yes No
17. Do you seek advice from several people before making any important decision? ..... Yes No
18. Do you find that being in a group of people brings out your best qualities? ..... Yes No
19. Are you more interested in books than in games and sports? ..... Yes No
20. Can you become so absorbed in work that you fail to notice if someone comes into the room? ..... Yes No

21. Do you ever ask questions of the speaker at a public meeting? Yes No
22. When traveling, do you like your companion to take responsibility for the tickets and baggage? Yes No
23. Would you like to work for a few years in a solitary place, such as at an isolated weather observatory? Yes No
24. Can you get more ideas from discussion than from reading? Yes No
25. Are books or movies more entertaining to you than a group party? Yes No

TYPE C

1. Do you have difficulty in starting a conversation with a stranger? Yes No
2. Do you propose "stunts" to put life in a dull party? Yes No
3. Do you often become very excited? Yes No
4. Can you usually make up your mind for yourself? Yes No
5. At a reception, do you usually try to meet the most important person present? Yes No
6. Are you a rather shy person? Yes No
7. Are you self-conscious in the presence of deans, employers, etc.? Yes No
8. Do you feel badly when criticized? Yes No
9. Are you troubled with nervousness? Yes No
10. Is it easy to make you blush? Yes No
11. Do you become discouraged if people do not agree with you? Yes No
12. Do you often feel just miserable? Yes No
13. Does praise make you feel that you are succeeding? Yes No
14. Have you crossed the street to avoid meeting someone? Yes No
15. Do you usually solve problems by yourself rather than to have someone help you? Yes No
16. Are you lacking in self-confidence? Yes No
17. Do you feel that people sometimes take advantage of you? Yes No
18. Have you ever been troubled with feelings of inferiority? Yes No
19. Do you have many ups and downs of mood? Yes No
20. Do you have a hard time saying "no" to a good salesman? Yes No
21. Are your feelings easily hurt? Yes No
22. Do you dislike public speaking? Yes No
23. Can you stand jeering without being hurt when you are sure of yourself? Yes No
24. Do you get stage fright? Yes No
25. Do you mind having people watch you while you work? Yes No

These questionnaires are based on *The Personality Inventory* by R. G. Bernreuter and on *Factor Analysis in the Study of Personality* by J. C. Flanagan, and are reproduced by permission of the Stanford University Press, publishers.

SCORING AND INTERPRETING THE PERSONALITY QUESTIONNAIRES

(Do not read this until after you have answered the questions.)

Scoring. Score the Questionnaire by making a check mark opposite each *significant response* among your answers. In *Type S* the significant response is *Yes* for questions 3, 6, 7, 12, 13, 19, 20, 21, 23, and 25. The significant response is *No* for questions 1, 2, 4, 5, 8, 9, 10, 11, 14, 15, 16, 17, 18, 22, and 24.

For *Type C*, the significant response is *Yes* for numbers 2, 4, 5, 15, and 23. The significant answer is *No* for questions 1, 3, 6, 7, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20, 21, 22, 24, and 25.

Your score in each trait is the number of significant answers that you marked. Do not combine Type S and Type C. Each is a separate trait.

Interpretation: To determine whether your score is high, average or low, it is necessary to compare it with the scores made by other persons. The data in the table below were determined by administering the questionnaires to upper-class college students, 64 men and 123 women. The percentile rank of a score is the per cent of the group exceeded by persons receiving that score. A percentile rank of 90 means a score exceeded only by the highest ten per cent of the group; a percentile rank of 10 exceeds only the lowest ten per cent. The average score is the 50th percentile. The middle half of the group lies between the 25th and 75th percentiles. Scores between percentiles 25 and 75 should be interpreted as "normal." Scores over the 75th percentile may be called "high," those above the 90th percentile "very high." Scores below percentile rank 25 are "low," those below the 10th percentile "very low."

TENTATIVE STANDARDS

Percentile Rank	Type S "Self-Sufficiency"		Type C "Self-Confidence"	
	Men	Women	Men	Women
90	18	17	22	17
75	15	14	19	14
50	12	11	16	12
25	9	8	13	9
10	7	6	10	7

Meaning of Traits Measured. Type S items measure *self-sufficiency* or independence. Persons scoring high in this trait indicate by their answers a tendency to do things alone rather than with others, to solve problems by themselves and to endure their troubles alone rather than to seek help or sympathy. Persons making low scores show the opposite traits. Of course, there are more persons showing an intermediate degree of independence than there are at either extreme.

The Type C items measure *self-confidence*. Persons scoring high are sure of themselves, confident of their abilities and not injured by criticism. Low scores indicate a tendency to feel inferior or incapable, to be sensitive to criticism and to avoid public appearance.

This Personality Questionnaire is, of course, only a very small sample of the individual's behavior in respect to the traits considered. For this reason it cannot be assumed to have very high validity. The reason for including the Questionnaire here is only to familiarize the reader with its technique. The student may well compare the results with his own estimate of his status in respect to these two traits. The traits of "self-sufficiency" and "self-confidence" are almost entirely independent. A person with a given score in one trait may have either a high or a low score in the other. Any degree of self-sufficiency may be found with any degree of self-confidence.

SUGGESTED READINGS

Varied and stimulating approaches to the entire problem of personality will be found in Allport, *Social Psychology*, chaps. 5 and 6; Watson, *Psychology from the Standpoint of a Behaviorist*, chap. 11; Morgan, *The Psychology of Abnormal People*, chap. 10; and Schoen, *Human Nature*, chaps. 14 and 15.

To understand the doctrine of personality types, one should read Jung, *Psychological Types*. Rosanoff, *Manual of Psychiatry*, Part II, chap. 25, gives his own classification of types. Murphy and Jensen, *Approaches to Personality*, chap. 1, makes an interesting defense of the doctrine of types from the point of view of *gestalt* psychology. Paterson, *Physique and Character*, is a critical review of studies in this field.

Symonds, *Diagnosing Personality and Conduct*, is the most complete reference on personality measurement. Symonds, *Psychological Diagnosis in Social Adjustment*, contains a classified summary of the available rating scales, questionnaires and tests in this field. Freyer, *The Measurement of Interests*, is another very useful reference. A briefer account of the measurement of personality is contained in Garrett and Schneck, *Psychological Tests, Methods and Results*, Part II, chap. 3. For illustrations of a series of research studies using objective tests of conduct and personality, consult Hartshorne and May, *Studies in Deceit*, *Studies in Service and Self-Control*, and *Studies in the Organization of Character*.

CHAPTER XII

ORGANIC FACTORS IN PERSONALITY

BODILY CONDITIONS AFFECTING ADJUSTMENT

IN THE study of psychology, the principal emphasis is usually placed on the rôle of habit and experience in the formation of traits of personality. This point of view is a defensible one, for it stresses those aspects of human life that have been assigned to psychology in the division of labor among the sciences. The great importance of certain other factors which may affect the individual's adjustments should not be ignored, however. A human being is a biological organism whose behavior is in a large measure determined by its *structure*, and by its *physiological functions*. Persons who have serious organic defects or weaknesses inevitably face adjustive problems different in nature from those which confront persons who are well-formed and strong. The effect of various physiological conditions on personality traits is the subject of common observation. If an individual is very fatigued, if he is in pain, or if he is digestively unwell, his typical reactions to situations will be affected to a marked degree. A sour and pessimistic tendency is often described as a "dyspeptic" disposition, a personality characteristic thus being attributed to the digestive condition of the individual. While it is impossible to consider all such states in detail, a brief generalization is justified. Any serious disruption of the physiological processes of the individual predisposes him to inferior and nonadjustive reactions to his immediate problems.

It is convenient to distinguish two ways in which organic states may influence adjustment. In many cases, the effect is a *secondary* one, the personality traits being modified only by the individual's recognition of his disability. Many instances of this indirect influence of physical characteristics have already been met. The strong boy is very likely to develop a different

outlook on life from the puny one. Handicaps in size, physique, health and beauty are potent sources of attitudes of inferiority which may in turn lead to inadequate defensive reactions. Fear and despair in the face of serious diseases or of annoying symptoms may cause persistent nonadjustive behavior. Since they have received detailed consideration in the preceding chapters, these secondary influences of structure on behavior need no further description.

A number of anatomical and physiological conditions have a *primary* effect on the nature and quality of adjustment. The most obvious of such disorders are diseases and injuries which directly disturb the nervous system itself. These may cause various degrees of sensory deficiency or may reduce the individual's ability to remember, to discriminate and to plan, thereby radically impairing his adjustive powers. Several of the psychoses, severe mental disorders that require institutional care, are produced by these kinds of disability. In the field of the relatively less severe disturbances of behavior with which we are more concerned here, a number of physiological disorders may play an important part. Some glandular conditions, some toxic states, and some defects of cell nutrition may influence adjustments in a direct manner. Not all of these conditions are well understood, but enough evidence has been accumulated to make profitable a brief review of some of the primary physiological factors in personality.

THE ENDOCRINE SYSTEM

Chemical Integration. The co-ordination of bodily processes and of behavior is effected by two principal means. The most important of these modes of integration operates through the structures of the nervous system. The neural impulses from sense organs, both from those such as vision which report the outside world and from those within the body cavities, are transmitted to nerve centers in the central nervous system. Here they are redistributed and sent outward in patterns which achieve an effective co-ordination of the organs of response

which are chiefly muscle structures. The operation of the nervous system is the basis of all learning, and is therefore fundamental to the processes of adjustment.

Another way in which responses are co-ordinated is by means of *chemical integration.* A large number of complex chemical substances are secreted by the glands of the body. Some of these perform the well-known operations of digestion on the food materials in the alimentary tract, while others such as the tear glands of the eye serve protective functions. From the point of view of psychology, the most interesting gland performances are those in which the secretion of one gland influences that of another and those in which a secretion has a regulating effect on bodily processes such as metabolism and growth. The manner in which one secretion may elicit the production of another is clearly seen in some digestive processes. The introduction of a weak acid into the upper part of the small intestine causes the pancreas to pour forth its secretion. Thus the acid gastric juice of the stomach, escaping into the intestine, initiates the next step in the process of digestion. This will occur even when all nerves to the area concerned have been cut. A chemical stimulus may arouse a chemical response without the intervention of the nervous system.

The glandular and nervous systems are, however, closely interrelated. Glands may be activated by a neural discharge through the proper channels. In some cases both chemical and neural connections control the same process, their effects being supplementary. On the other hand some glandular secretions and other chemical substances in the body may have an important influence on the nervous system, either in regulating specific functions or in determining the general efficiency of neural action. This last-named effect is the most significant one in relation to adjustive behavior.

The Endocrine Glands. Most glands discharge their secretions into body cavities, where they perform a limited function. Another type of glandular action, often more general in its effects, occurs when a secretion is absorbed by the blood and carried to all parts of the body. Glands that act in this way are

termed *endocrine* glands. The name "ductless glands" was formerly applied to them, since several of the more important endocrines have no outlets, discharging only into the blood, but it is now recognized that some glands with ducts have endocrine functions also. An endocrine gland secretion is called a *hormone*. The glands definitely known to produce hormones are the pituitary, the thyroid, the parathyroids, the adrenals, the pancreas, the stomach and intestines, and the gonads or sex glands. It is probable that the pineal and thymus glands are also endocrines, and possible that the liver, the heart and the spleen secrete hormones also. The approximate locations of the more important of these organs are shown in Figure 23. In earlier times many incorrect and often absurd conjectures were made as to their rôle in the body, the most frequent guess being that they were vestigial remnants of primitive organs, and no longer of any importance. The first experimental work with the endocrines was performed by Berthold in 1849 on the sex glands of chickens. Since then research has progressed rapidly, especially in the present century, but much is still undiscovered.

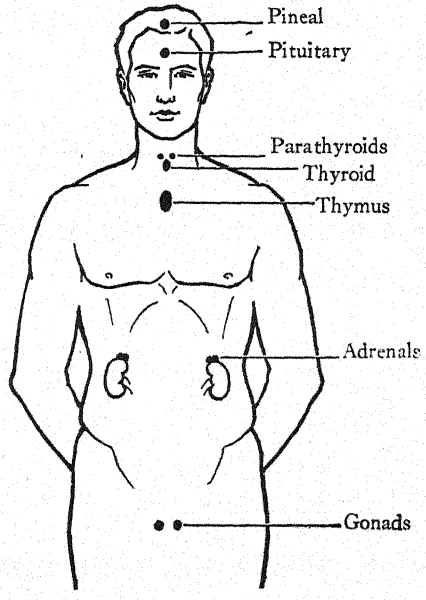

FIG. 23. THE LOCATION OF THE PRINCIPAL ENDOCRINE GLANDS

The Thyroid Gland. More is known about the functions and disorders of the thyroid gland than about the other endocrines. The thyroid consists of two lobes which straddle the trachea in the base of the neck. Microscopically examined, it may be seen to be composed of a number of tiny sacs which are lined with the secreting cells and filled with a colloid substance which

stores the secretion. The thyroid hormone, *thyroxin*, has been isolated and even prepared synthetically. It is of very complex structure and contains about sixty per cent of iodine. Disorders of the thyroid are especially prevalent in certain regions in which the natural waters are lacking in iodine content, such as the Great Lakes region of the United States and some parts of Switzerland. Secretions of endocrine glands are produced in minute amounts, and very small concentrations are effective in performing the necessary functions. The total amount of thyroxin present in the blood at any one time in a normal person has been estimated as one fourth of a grain.

The principal function of thyroxin is to regulate the body metabolism. It acts as a catalyst or assisting chemical substance in controlling the combustion of oxygen in the bodily tissues. An under supply of thyroxin causes a low rate of metabolism with consequent sluggishness and lack of endurance. Too great a secretion of this hormone causes too high a rate of oxygen consumption, accompanied by an excessive display of activity on the part of the individual affected. In children, a lack of thyroxin also retards growth and sexual development. So definite is the effect of the thyroid on metabolism that the usual test for its malfunctioning is that of determining the rate of oxygen consumption while at rest, which is called the *basal metabolism*.

Extreme disorders of the thyroid gland have conspicuous and serious effects on the individual. A serious deficiency in thyroxin dating from birth or infancy gives rise to a condition known as *cretinism*. In cretins, growth is seriously retarded, especially in the skeletal structures. A typical facial and bodily appearance characterize this disorder, the face being flattened, puffy and wrinkled, the arms and legs short, and the abdomen protruding. The skin appears dry and hair is scanty. Mental retardation is equally marked, many cretins being feeble-minded. If discovered at an early age, this condition can be corrected by the administration of thyroxin. A deficiency of thyroid secretion in adults gives rise to the condition of *myxedema*. Persons suffering from this disorder have a low metabolism, which often

results in obesity through the accumulation of fat. The skin, as in the case of the cretin, is dry and bloated in appearance. The body temperature of myxedemous persons is likely to be low and they complain of being cold. Mental functions are usually retarded, with sluggishness of thinking and inability to concentrate. In a few cases, however, for reasons not well understood, the individual becomes irritable rather than phlegmatic. Myxedema may be treated successfully with thyroid extracts.

Since thyroid deficiency may progress to any degree, there are undoubtedly many cases of relatively mild disorders of this class which go unrecognized. Probably some of the persons who suffer from "general poor health" and "neurasthenia" are really cases of thyroid disorder. Symptoms of sluggishness, apathy and weakness can arise from many causes, however, either physiological or psychological. Not every occurrence of these conditions is to be ascribed to glandular defects. When thyroid deficiency is suspected, the basal metabolism test offers a means for making a fairly sure diagnosis.

An excessive secretion of thyroxin causes an increased speed of bodily processes, with restlessness, hyperactivity and loss of weight. In milder forms, *hyperthyroidism* may be present without any very conspicuous anatomical symptoms. The psychological correlates of this condition have been described as excitability, insomnia, anxiety and a tendency to overreact to any emotional stimulus. All of these signs may be regarded as secondary effects of an unduly raised activity level. The symptoms of hyperthyroidism may be produced artificially by an excessive administration of thyroxin. In *goiter*, of which there are several forms, a gross enlargement of the thyroid gland itself occurs, and the other symptoms of hyperthyroidism are often present in marked degree. In severe cases, the most effective treatment is the surgical removal of a portion of the gland.

Imbedded in the thyroid gland are the four tiny *parathyroid* bodies, which are independent endocrine glands. Their secretion is known to regulate the calcium metabolism of the body, by controlling the calcium content of the blood. Removal or injury of the parathyroids results in convulsive seizures and

usually in death. Some cases of epilepsy are probably due to parathyroid disturbance, as they have been treated successfully with extracts of the gland. Not all epilepsy is due to this cause, however. As is true in the case of many other ailments, similar end-results may be due to any one of a number of causes.

The Adrenal Glands. The adrenal glands are two small caps located on the tops of the kidneys. Each consists of two distinct parts, the *adrenal medulla* or center layers of cells and the *adrenal cortex* which is the more superficial part. The two portions secrete distinct hormones. The secretion of the adrenal medulla has been known for a long time and is termed *adrenalin* (or *epinephrin*). This is the substance secreted in states of strong emotion, as has been described in a previous chapter. The adrenalin serves to reinforce the action of the sympathetic division of the autonomic nervous system, contributing to the stopping of digestion, the increase of blood pressure and the other "emergency" reactions of intense emotion. The apparently plausible hypothesis that the adrenal medulla might contribute to the maintenance of blood pressure and muscular vigor has not been upheld by experimental evidence. Animals deprived of this part of the glands survive in good health. A rare condition of overactivity of the adrenal medulla causes "adrenal apoplexy" in which blood pressure is suddenly raised to an abnormal degree, sometimes resulting in death.

The functions of the adrenal cortex, or outside portion of these glands, have been understood only recently when the hormone, *cortin*, has been isolated. This secretion is essential to life, for the removal of the cortex causes the prompt death of experimental animals. Serious deficiency in the secretion of cortin is now recognized as the cause of *Addison's disease*, a condition first described in 1855. Its symptoms are extremely low blood pressure resulting eventually in death from circulatory failure. Victims of this disorder show the psychological symptoms of fatiguability, exhaustion and depression. It can now be treated with preparations of the adrenal cortex hormone. Cortin seems also related to sexual development, although the exact manner of its influence in this field is obscure. Over-

activity of the adrenal cortex before birth results in abnormalities of the sex organs in girls, tending toward the male type. Occurrence in childhood may cause precocious puberty in boys, and a change toward masculinity in girls. In adult women an excess of cortin gives rise to *virilism*, in which the female sex functions are inhibited, the voice deepens and a beard appears on the face. The extent to which slight excesses of this gland may contribute to masculinity in women is not yet fully known.

The Gonads. The sex glands, in addition to their function of developing reproductive cells, secrete hormones which determine the secondary sexual characteristics of bodily form, voice and the growth of hair. The male sex hormone is secreted in the testes by the interstitial cells which lie in the tissue supporting the cells producing the reproductive spermatazoa. If this hormone is not secreted, because of injury or atrophy affecting the glands or because of the inhibiting influence of other glandular disorders, the secondary sex characteristics of the male do not appear. The shape of the body remains childish or tends to a distinct type of obesity, the voice is high-pitched and the beard is scanty or absent. It is alleged that castrated males tend to be weak, depressed and sluggish, and to lack aggressiveness and purposefulness. How much of this is due to the primary lack of the hormone and how much to secondary effects of a purely psychological nature cannot be determined. Historical evidence indicates that some castrated persons, as the eunuchs of the oriental courts, have been able individuals.

The sex hormones of the female are more numerous and more complicated in their action. One hormone, contained in the liquid of each follicle, or unit of structure of the ovary, is *theelin*. This acts in a manner rather analogous to the gonadal hormone of the male. It stimulates the reproductive organs and the breasts and determines the secondary sex characteristics of the female. Theelin is secreted constantly throughout life until the menopause. A hormone of different nature, termed *progestin*, is secreted periodically by the *corpus luteum* which consists of cells formed in a follicle of the ovary after the discharge of an ovum. If pregnancy ensues, the corpus luteum continues

active for several months, repressing menstruation. If this does not occur, it atrophies in about two weeks, paving the way for the next menstrual cycle. Ovarian deficiency causes a lack of both of these hormones. The effect of the loss is not as clearly known as is that of the corresponding state in males. It is reported that hypogonadal women tend to be egotistic, resentful and full of self-pity. This pattern looks very much like a defensive attitude formed as a reaction to the loss of an esteemed life function, and therefore only a secondary effect of the glandular disturbance.

A possible direct rôle of the sex glands in adjustment is hinted by physiological findings concerning some patients diagnosed as in the class of "dementia praecox," the serious psychosis characterized chiefly by withdrawing, apathy and disintegrated behavior. A number of cases of dementia praecox, on post mortem examination, show degenerative changes in testes or ovaries. This finding has been interpreted as showing that the reason for the lack of energy of these psychotics lies in the deficiency of their sex hormones. This is not a secure deduction, however, as other degenerative changes are also found, especially in the brain. The gonadal degeneration in dementia praecox may be a result of the condition, rather than its cause. Treatment of dementia praecox with sex hormone preparations has not shown promising results.

The Pituitary Gland. Lying in a small depression in the skull at the base of the brain is the pituitary body, the most complex and perhaps the most important of the endocrine glands. The pituitary consists of two principal parts, the anterior and posterior lobes, which are connected to the brain by a slim stalk. The anterior lobe is readily seen under the microscope to be of glandular structure. The posterior lobe, which is derived from the brain in the course of the development of the embryo, is not so apparently glandular, but hormones have been extracted from it. Each of these parts secretes not merely one hormone alone, but several. The "pars intermedia," between the two lobes, has also an independent endocrine function. Timme (1934) states that there are five identifiable hormones secreted

by the anterior lobe, and possibly several more. The posterior lobe secretes at least two.

The best-known of the hormones of the anterior lobe of the pituitary is the *growth hormone*. A deficiency of this secretion in early life causes a dwarfism of a symmetrical type, the individual becoming a miniature adult. Unlike cretins, pituitary dwarfs are unaffected mentally. An excessive secretion of the growth hormone causes giantism, the extreme growth of the long bones and of the hands and feet being most noticeable. Most circus giants are of the pituitary type, cases in which a height of over nine feet is attained having been authenticated. If the growth hormone becomes secreted in too great amounts after adult stature has once been reached, the disease of *acromegaly* results. Such bones of the body as remain soft, the nose, the chin, the hands and the feet, show an abnormal growth, often making the individual unrecognizable as his former self. Oversecretion of the pituitary is usually due to a tumorous enlargement of the gland.

The pituitary gland secretes several hormones that exercise a controlling influence over other glands. One of these has been termed the *master sex hormone*. This secretion seems necessary for the adequate functioning of the gonads of both sexes. A lack of it delays or prevents sexual maturity, an excess often causes precocious puberty, an effect similar to that of the adrenal cortex, except that the pituitary hormone is stimulating to either sex. The pituitary sex hormone and its growth hormone seem to be antagonistic. In normal individuals a correct balance is maintained, but excessive growth from pituitary disorder is usually accompanied by sexual immaturity, while sexual precocity of the pituitary type often involves stunted growth. The *thyrotropic* hormone of the pituitary anterior controls the action of the thyroid gland. Recent studies seem to indicate that "exophthalmic" goiter, in which the eyeballs protrude, is due primarily to this pituitary hormone, which causes the thyroid to swell and oversecrete and has a direct effect on the eyes.

Other pituitary hormones include those controlling fat and

carbohydrate metabolism, one regulating the rate of water exchange of the body, and still others whose effects are not differentiated. The complexity of the problem presented by the pituitary gland is not to be underestimated. Its many hormones are intricately related both among themselves and with the other glands of the body. A further difficulty arises from this gland's close association with the hypothalamus, the lower brain center which, among other duties, regulates several of the metabolic functions. Much more research is needed to solve the problems presented by this multi-functioned gland.

One further important disorder which is ascribed to a combination of pituitary deficiencies is *Fröhlich's disease*. This occurs more commonly among boys, who show great obesity but small bone development, a lack of sexual maturity, and general lack of stamina. It has been treated with some success with pituitary extracts. This condition is not uncommon, the "fat boy" familiar in every school presenting the typical picture. The fat is usually deposited around the hips and chest in a characteristic manner, giving some assistance to a physician in recognizing the disorder. Since youngsters suffering from this disease are fat, weak and "sissy," they are often subjected to persecution from their fellows and develop secondary defense mechanisms.

There is some disagreement as to the direct effects on personality of abnormalities of the pituitary gland. Excessive sleepiness, occasionally amounting to stupor, has been reported as a result of pituitary deficiency. Rowe (1931) has found a marked tendency to behavior problems of various sorts among children with pituitary disorders. Of a group of 104 children presenting conduct problems, two thirds showed evidence of endocrine disorders, the pituitary being blamed in a majority of cases. On the other hand, many definite cases of glandular disorder show no specific difficulties of adjustment.

Other Endocrine Glands. The *pineal* gland is a tiny body located, like the pituitary, near the brain. It functions principally during childhood, becoming loaded with calcium concretions in adult years, and probably regressing in function. The

thymus, located in the chest, shows a similar tendency to be large until puberty, after which it shrinks to smaller size. Because of this connection with puberty two theories of the function of the pineal and the thymus have been proposed. One is that they hold back sexual development until the proper time. The other is that they exercise a general stimulating function on body tissues which is taken over by the gonads at sexual maturity. It is known that the pineal gland atrophies early in some cases of precocious puberty, but the evidence is not clear. There is considerable doubt that the thymus is an endocrine gland at all. It is closely related to the lymphatic system and its atrophy in adolescence may be only a part of the general lymphatic changes occurring at that time.

The endocrine function of the pancreas, or rather of the *islands of Langerhans* imbedded in it, has recently become well known in connection with *diabetes*. The pancreatic hormone, *insulin*, regulates the sugar metabolism, and its deficiency causes the formerly hopeless disease. Effective treatment of diabetes with insulin is now an accomplished fact. An extremely high sugar content in the blood has pronounced psychological symptoms, often starting with depression and continuing to confusion and disorientation. These facts emphasize the importance of precise chemical balance in the body for the proper functioning of the nervous system.

Endocrine Disorders in Adjustment. The more severe endocrine disorders such as myxedema, exophthalmic goiter and Addison's disease present problems that are primarily medical rather than psychological. In their early stages, these diseases are sometimes unrecognized, and their symptoms are sometimes ascribed to adjustive ailments such as "neurasthenia." Psychological workers should be alert to discover the signs of serious endocrine conditions, and should refer the patients to the appropriate medical specialists for diagnosis and treatment.

Milder forms of endocrine disturbance often underlie adjustive problems that are psychological in all but the organic predisposing factor. The case of Louise W. illustrates a diffi-

culty of this class. Louise was the eldest daughter of a college graduate engineer who had attained marked success in his profession. His aims for Louise's education were high and he expected much of her. After a rather undistinguished performance in the higher grades of the elementary school, Louise disconcerted her family by repeatedly failing her high-school subjects. Enrolled in a classical course of study, she was consistently unable to pass Latin, History, French and English. At the age of eighteen she had reached only the tenth grade, the work of which seemed beyond her ability. Mr. W. reacted to Louise's failures by lecturing her, by depriving her of privileges and by trying to goad her into better accomplishment. Louise responded alternately with rebellion and with tears, and sincerely threatened to run away from home. The attitude of her father caused her to loathe her studies and resulted in an even worse school record. A psychologist who was a friend of the family knew of the difficulties and was permitted to make a study of the girl.

Louise presented a very juvenile appearance, looking more like a fourteen-year-old than like a girl of eighteen. She was short and stout in a pudgy way. Her face was round, with a sagging expression, and her abdomen was protuberant in a manner distinctly suggestive of thyroid deficiency. On an individual mental test she made an exactly normal record with an I.Q. of 100, but her responses were unusually slow. On a test of reading ability she scored only at the twelve-year level, principally because she was unable to complete the tests in the time allowed. These observations showed her not to be stupid, but slow. It was recommended that she be taken to an endocrine specialist. The physician found a low rate of metabolism and prescribed thyroid treatment. At the same time, the psychologist convinced Louise's parents of the unwisdom of their attitude toward her school work. Louise changed to a curriculum that was easier and more interesting to her. Her parents helped her and offered encouragement instead of scolding. Three years later Louise was graduated from high school with a creditable record. The glandular treatment contributed

to the solution by correcting her slowness and lethargy, but the psychological treatment of the attitudes of Louise and of her parents was also an important factor.

The Endocrines in Personality. The successes of hormone treatments in some cases of maladjustment have led to many overenthusiastic claims concerning the rôle of the endocrine glands in the formation of normal personality. Since certain thyroid, pituitary and gonadal deficiencies are known to cause slowness, apathy or weakness, it has been assumed by some writers that brilliance of intellect and dominance and leadership in social affairs must be due to an uncommon excellence in the functioning of these same glands. Psychologists with an inadequate knowledge of physiology, and physicians who lack a critical attitude toward behavior traits have contributed equally to the misunderstanding. One eminent medical authority has made the unsubstantiated statement that hyperthyroid persons readily attain Phi Beta Kappa rank in college! If this were true, thyroid feeding would be a part of every freshman curriculum. Claims such as this indicate the extreme caution that must be exercised in accepting statements concerning the endocrines, unless they are accompanied by experimental proof.

The most fallible kind of evidence concerning the endocrines is that based on the results of administering glandular extracts. An imposing number of cases of psychoneurotic nature have been improved by treatment with the hormones of a variety of glands. In many of these instances, the factor of *suggestion* has not been properly controlled. A psychoneurotic is often aided by the conviction that he is being successfully treated, regardless of the real merit of the medicine given. Hoskins (1933) refers to many glandular treatments as "triumphs of psychotherapy." That hormones take the place of miracles in curing these cases is to be suspected.

Even a conservative estimate, however, must give considerable importance to endocrine disturbances in relation to personality and adjustment. Glandular disfunction, especially of the thyroid, pituitary and sex glands, may cause a lowering of

the energy available for adjustive attempts and hence lead to weak and nonadjustive attitudes and behavior. Equally important are the secondary effects. The person who is slow, obese or fatiguable suffers handicaps in life for which he almost inevitably devises compensatory forms of behavior. Nonmedical persons such as psychologists and social workers should not try to diagnose or treat glandular disorders, nor should they use the endocrines as a scapegoat on which to blame conditions that do not readily yield to psychological treatment. It is valuable for all persons concerned with adjustive problems to be able to recognize the symptoms of the more common endocrine abnormalities, however, so that suspected cases can be referred to medical specialists for final diagnosis and treatment.

Among the normal variations of personality traits, the only one that seems to have a probable endocrine basis is that of energy or activity level. Several glandular abnormalities depress the individual's supply of energy while others raise it unduly. Adjustive ability is affected at either extreme. Other causes, however, including purely psychological ones, may influence activity level. The apathy characteristic of an extreme withdrawing adjustment may closely resemble that due to the lack of some endocrine secretion. An emotional tension may produce effects that somewhat resemble hyperthyroidism. Endocrinology has made valuable contributions to the study of personality, but it supplements the psychological conceptions and does not replace or refute them.

OTHER ORGANIC INFLUENCES IN PERSONALITY

Drugs and Toxins. Mankind has long noticed both temporary and permanent effects that habit-forming drugs have on their users. Alcoholic intoxication, for example, is a well-known temporary behavior disorder. Some persons weep and are depressed; others become excited or aggressive. Alcohol releases inhibitions and lowers the individual's ability to judge, to discriminate, and to control his behavior. Chronic alcoholism sometimes results in more permanent symptoms. These

may include hallucinations, delusions, loss of memory and general mental deterioration.

Other habit-forming drugs such as morphine, heroin and codein cause lethargy and a pleasantly dreamy state while their effect lasts. After the drug has worn off, severe restlessness, anxiety and inability to concentrate are experienced by the habitual user.

In many instances the habitual use of alcohol and even of more damaging drugs is the *result* rather than the cause of maladjustment. Because drugs offer an escape from the awareness of unpleasant situations, they are frequently utilized as defense mechanisms. Many habitual drunkards continue their use of alcohol because of a persistent need for relief from adjustive difficulties. This psychological factor is probably as important in the causation of chronic drug addiction as is the more usually emphasized one of physiological habit. Even when medical treatment has cured a drug habit, many addicts relapse after a short time because their emotional need for the drug has not been eliminated. Mental hygiene and adjustive treatment are necessary to remove the handicaps of personality that make the drug necessary as an escape mechanism.

Some internal toxic conditions, either general or localized, may influence traits of personality. Focal infections such as those arising from infected teeth, tonsils or sinuses have been known to predispose individuals to nonadjustive behavior. Sometimes these conditions produce a lack of energy and ready fatiguability which handicap adjustive ability. In other cases infections seem to cause restlessness, irritability and "nervousness." Similar effects have been observed in persons whose toxic condition arises from intestinal disturbances. Any condition that generally weakens the body may have an influence on the quality of adjustment.

Bacterial Infections. Infectious diseases that attack the nervous system directly have a most injurious effect on conduct and adjustment. Several severe disorders of this type may develop from syphilis. The most serious syphilitic infection of the nervous system is *general paresis.* The onset of this

disorder is usually in the prime of life. Its early symptoms often include defective judgment and tendencies to excesses that are sometimes incorrectly ascribed to faults of character. Diagnosis of paresis is made by the discovery of the germ of syphilis in the cerebrospinal fluid. This is a serious disease and hospital care is required, but methods of treatment are fairly effective if begun in the early stages. *Juvenile paresis* is a different form of this infection, arising in childhood from congenital syphilis. Juvenile paresis has many physical and mental symptoms, including mental deterioration with increasing dullness. It has been alleged that the first signs of juvenile paresis are often stealing, truancy and queer behavior. Although only a small part of such conduct can be due to juvenile paresis, physiological tests to determine if it is present are indicated in incorrigible cases.

Considerable interest has been shown in the study of the after-effects of another infectious disease of the nervous system, *encephalitis lethargica*, commonly called "sleeping sickness." The onset of this disorder is an acute one of unmistakable severity. Beginning with headache and lassitude, the lethargy soon develops, with confusion and apathy. On recovery from this acute stage, changes in character and temperament are often noted. Among the after-effects of encephalitis that have been observed are irritability, impulsiveness, stealing, running away, and in some cases retardation of mental development. Encephalitis definitely damages the brain tissues, but the exact relationship between the neural injury and the personality defects is not known. Further research that is being conducted on this problem may reveal some basic and much-needed facts concerning the correlation between brain structure and adjustive behavior.

Some suggestions have been made concerning the relationship of ordinary infectious diseases to traits of personality. Stratton (1926) found that among 900 students, those who had suffered from infectious diseases tended to be more irascible and to show more anger responses than those whose lives had been free from disease. Some diseases seemed to affect per-

sonality traits more than others. Scarlet fever, for example, seemed especially connected with a later history of excessive temper. At present, this field is a rather speculative one. In view of the close relationships between lower brain centers of temperature regulation and those concerned with emotion, some residual effects of diseases involving high fever seem not improbable.

Physical Habitus and Personality. From time immemorial a tradition has existed that persons of a certain body type, build, or habitus show characteristic traits of personality. Usually the distinction is drawn between a fat type of body structure and a thin tall type. Thus Shakespeare puts into the mouth of Julius Caesar:

> "Let me have men about me that are fat;
> Sleek-headed men, and such as sleep o' nights:
> Yond Cassius has a lean and hungry look;
> He thinks too much: such men are dangerous."

This tradition asserts that the rotund body type indicates the good mixer, the diplomat and the leader. Thin men are alleged to be moody, introspective and given to solitude.

A recent version of the doctrine of body types is that of Kretschmer (1925). This German psychiatrist distinguishes two principal types of habitus, with some intermediate and combined classes. The *pyknic* type is described as characterized by full faces, short necks, rounded limbs and a tendency toward stoutness. The *asthenic* type is the opposite, with an angular profile, a slender but often wiry body, and with outstanding muscles or bones. The principal intermediate type is termed the *athletic*, which may briefly be described as neither too stout nor too thin. Kretschmer classified 260 mentally deranged patients according to these types, making his classification on the basis of observation rather than by exact anthropometric measurement. He seemed to find that the dementia praecox patients (autistic personality) were overwhelmingly of the asthenic type, while the manic-depressives (cyclic personality) were predominantly pyknic. This finding has been extended, by analogy, to normal persons. It alleges that as-

thenic persons tend to be autistic or introverted in personality and that pyknics are extraverted or cyclic.

Further research has failed to confirm Kretschmer's theories completely, either with mentally disordered or with normal people. Other observers have found average differences between dementia praecox and manic-depressive patients that are in the same direction as those stated by Kretschmer, but the overlapping of groups is great. When exact body measurements are used instead of general impressions, the differences become even smaller. The moderate differences that exist may be due to glandular and nutritional variations.

Among normal individuals, physical habitus may be an important secondary determiner of personality traits, but it is probably not a primary one. Some of the endocrine disturbances already described may result in excessive thinness or stoutness. Also, lean and fat individuals may be influenced in their adjustive learning by their respective handicaps. Perhaps all that is of value in the theories of physical habitus is adequately summarized in the old humorous statement that a fat boy has to be good-natured because he can't fight and he can't run.

HEREDITY

Opinions Concerning Heredity. Popular opinion seems to be strongly in favor of the belief that traits of personality are very largely determined by heredity. Almost every child behavior case that is brought to a psychologist is accompanied by a statement that the youngster resembles some relative in an undesirable trait. That a child's father and grandfather had uncontrollable tempers is often considered to be an all-sufficient explanation of this trait in the most recent generation. It is amusing to note that the "bad heredity" blamed for the child's misdoings is usually on the side of the family opposite from that of the person making the report. Many people think of heredity as a force which causes children to resemble their parents, and regard as inevitable and incurable any trait

that is hereditary. This is a very comforting rationalization, for it relieves the parents of the blame or responsibility that they would feel if they believed the undesirable behavior to be due to defective training. The untangling of the problem of heredity would be of great service to the psychology of adjustment. Uncontrollable temper would be understood and treated differently if it were due to heredity, than if it were acquired from generation to generation. Although a full account of what is known concerning heredity is impossible in a limited space, it is worth while to describe a few general principles and to see how they apply to the study of behavior problems.

The Basis of Heredity. Heredity is the determination of the structure of an organism by the materials received from the parents' germ cells. In all species that reproduce bisexually, each individual starts his career as a union of two cells, one of which comes from each parent. In the nuclei of these cells are observable bodies known as chromosomes, each chromosome consisting of minute particles called genes. The *genes* are the determiners of heredity. Genes act in a manner much more complex than was once supposed. The now discredited "unit character" theory implied that there was one gene for each trait. It is known today that the combination of several genes is necessary to determine even a simple characteristic. The eye color of the fruit fly *drosophilia melanogaster*, the heredity of which has been most thoroughly studied, depends on more than fifty pairs of genes. This complexity renders the study of the relationship between genes and their consequent structures difficult, but does not injure the validity of the genetic theory. The theory of the genes is as substantial and as widely accepted as is the atomic theory of physics.

It is commonly said that heredity means resemblance to parents. This is a very inexact and misleading statement. The germ cells are not manufactured by the body cells of the parents, and are not modified by the acquisitions, for better or for worse, that the parents make during their lifetimes. Parents transmit to their offspring only the traits that they themselves receive by inheritance. If children resemble their parents,

it is because both generations developed from the same stock of germ cells, not because of any transmission of the actual parental characteristics. On the other hand, a child may possess a trait that is quite unlike that of his parents, but which may still be hereditary. As Jennings (1930) points out, brown-eyed parents have brown-eyed children, but they also sometimes have blue-eyed children. It is ridiculous to think of heredity "working" in the former case and "not working" in the latter. Both eye colors are hereditary if either is. Even the simplest theory of inheritance, the Mendelian laws, explains by the concepts of dominant and recessive traits how children may differ from their parents in an hereditary characteristic. In studies of large groups a considerable resemblance between parents and their children is found, but this is a matter of statistical probabilities, not of exact and inevitable similarities.

The genes play a part only in the development of the *structure* of the organism. Heredity does not directly determine function or operation, but influences it only through the formation of organs and members on which functioning may depend. In Chapter II the theories concerning the inheritance of behavior in the form of "instincts" and "emotions" were explored, with principally negative results. When there is a question as to the influence of heredity on a dynamic trait of behavior, the first necessity is to discover the structure on which the trait depends. A defective number or quality of nerve cells in the brain, or a deficient thyroid gland may be as much influenced by heredity as the color of the hair or eyes. On the contrary, characteristics of behavior that are based on intricate patterns of neural organization can be regarded as influenced by heredity only in an indirect manner. When a behavior trait can be ascribed to a definite variation in structure, the probability of its being much affected by heredity is increased.

Heredity and Environments. It is futile to search for traits that are entirely due to heredity or for ones that are entirely the result of learning and the action of environment. Since

the very existence of behavior necessitates an organic structure to perform it, no trait is uninfluenced by heredity. Since all characteristics may be modified by circumstantial factors, all depend in some degree upon environment. The actions of heredity and environment are not antagonistic, as is sometimes incorrectly assumed, but supplementary. Every characteristic of man is due to the development of certain original material under certain environmental conditions.

Heredity initiates the process of development and determines the limits within which it can be modified by external factors. It is probable, however, that genetic determiners do not affect all traits in equal degree. Some human characteristics may be distinguished as *relatively fixed*, in that they vary only in narrow limits or are affected only by the most intense and catastrophic changes in environment. Other traits are *relatively plastic* and can be modified in large degree by the ordinary variations of environment likely to occur in the usual course of life. This distinction is a valuable one, but it should not be interpreted to mean that traits can be classified into two divisions as fixed and plastic. This is as impossible as is the attempt to designate traits as hereditary or acquired. There is a continuous gradation from the extreme of fixity on the one hand to the extreme of plasticity on the other. Traits differ only in the degree to which they are modifiable and in the intensity and nature of the environmental factors that must be brought to bear to effect a variation. An example of a very fixed trait is race. A negro or a white person receives the determiners of skin color and of general bodily features through the genes and these appear to be unmodifiable by circumstance. Examples of very plastic traits are numerous. The language that one speaks, the occupational skills that one acquires, individual likes and dislikes for persons, for books or for music, all depend on inherited structure for their sheer existence, but may be readily modified by environment and experience.

Whether a trait is fixed or plastic depends on what aspect of environment is brought to bear. Environment is no simple entity; the term "environments" would be more exact.

Some circumstances, such as those of nutrition, may cause significant differences in height, weight and resistance to disease, but at the same time may have little effect on literacy, courage or aesthetic preferences. Some other aspects of environment such as schooling and cultural advantages may greatly influence the latter traits, while leaving the former ones unmodified.

A brief inventory of man's chief environments may be made. The importance of *prenatal* environment has already been stressed in Chapter II. At birth and during the entire course of life *injuries and diseases* are very potent environmental factors which may radically change even characteristics that seem most fundamentally predetermined. *Physiological* environment in the forms of food, light, heat, exercise and rest provides an important influence in relation to some traits. In the more psychological sphere, the *cultural* environment of an individual, the general linguistic quality of his home, his parents' interest and participation in intellectual pursuits, and his formal schooling, are powerful environmental factors in affecting some traits. Too often overlooked is *emotional* environment. The child who has been pulled and hauled between quarreling parents, or who is full of home-grown fears and aversions, has been greatly modified by environmental influence. *Economic* environment underlies several of the other classes, especially the physiological and the cultural.

In general, basic anatomical and structural characteristics are relatively fixed in relation to the more usual kinds of environmental variation and are influenced only by circumstances of great intensity. Traits that are more functional, complex and less essential to life are found to be more plastic, being modified by environmental factors of milder degree and of more frequent variation.

DIRECT EVIDENCE CONCERNING HEREDITY

The practical problem of the relationship between heredity and the determination of traits of personality can be solved

only through the evidence gathered by particular fact-finding experiments. To what extent can the intelligence of an individual be modified by variations in his cultural-linguistic environment? In what degree can traits of temperament, sociality or character be changed by distinguishable environmental influences? Several experimental attacks have been made on specific problems such as these.

The Inadequacy of Family History as Evidence. That many adjustive defects of exceedingly varied nature, including feeble-mindedness, insanity, psychoneuroses, antisocial tendencies and crime, tend to run in some families has long been noted. This fact is the basis for much of the popular belief in the importance of heredity. A considerable number of very careful studies have been made of families which show continued and excessive variations from normal.

An early family study in the United States was that of the Jukes family, first reported by Dugdale in 1877, and brought up to 1915 by Estabrook. Of the then traceable surviving descendants of the family of allegedly feeble-minded sisters with which the history starts in the eighteenth century, 110 were mentally defective and 83 intemperate, while only 171 of a total of 1258 were described as industrious. Even more impressive is the history of the Kallikak family described by H. H. Goddard in 1912. Martin Kallikak, a soldier of the Revolution, had an illegitimate son by a feeble-minded girl, from whom 480 descendants were traced. Of these 143 were described as feeble-minded, 292 of uncertain intelligence, 36 illegitimate, 33 prostitutes, 24 alcoholics, 3 epileptics, and 3 criminals, while only 46 were known to be normal individuals. Later, Martin Kallikak married a normal girl of good family, from which union 496 descendants have been traced, thereby offering something of a control. Of the second line of descent only 1 was feeble-minded, 1 sexually loose, 2 alcoholic and 1 had "religious mania," the remaining 491 being normal, many of them successful business men and eminent members of the professions.

Studies of this type prove that almost any kind of defect

may run in families, but why they were ever considered as evidence concerning heredity puzzles the present-day observer. Researchers who put their faith in family histories seem to have utterly ignored the pertinent fact that children of the Kallikak inheritance were also reared in Kallikak environments. The observed results may be as much due to the social surroundings and to the cultural handicaps as to defective genes. In all probability, the Kallikak defects were due to a combination of the two factors, to different extents for various traits according to their degree of plasticity.

The error of considering family histories as evidence of heredity illustrates the danger of taking a technique from one field to another without also taking the corresponding precautions. Much valuable information concerning heredity has been gained from experiments in which the occurrence of a trait in plants, insects or lower animals has been observed through successive generations. In these experiments, however, environmental factors have been rigorously controlled. Differences appearing in rats would be considered hereditary only if they appeared under constant conditions of food, air, hygiene and other pertinent factors. Human family studies are valueless because of the impossibility of controlling environments to a sufficient degree.

Another similar fallacy is well illustrated by the belief in the inheritance of insanity. Some years ago if any case of mental disorder was found in the family of a patient newly admitted to a mental hospital, the cause was promptly ascribed to "heredity." On the basis of such observations, statements have been made to the effect that sixty per cent or more of insanity is hereditary in nature. More recent studies show that the average normal person is likely to have one or two seriously mentally disordered persons in his family history. Only by comparing this normal quota to that of the insane can any proper conclusion be drawn. Some insanities that involve obscure structural defects *may* be influenced by heredity, but the usually cited data mean nothing.

That adjustive difficulties are frequently found in successive generations is the experience of every psychologist, and in many cases such occurrences are blamed on heredity. Morgan (1924) cites a typical instance of a girl of ten who was brought to a clinic on the complaint that she was nervous, had queer mannerisms and had run away. Because the family history indicated that this child's mother had suffered a "nervous breakdown" four years previously and had been suspected of having chorea at the age of fourteen, and that the grandmother was nervous as well, the case had been diagnosed as "neurotic tendencies" due to heredity. At the modern clinic, the "heredity" was quickly refuted. When separated from her mother, the girl acted in every way as a normal child. The ten-year-old's instability was due to the fact that at every turn she was thwarted and punished by the neurotic mother. One conduct disorder had given rise to another, not by inheritance, but by the reaction of one personality to another.

The family history studies, then, offer no conclusive evidence as to the relative effect of heredity or environments on mentality or character. While some of the unfortunate traits of the Jukes or the Kallikaks may really be due to inheritance, other proofs are needed to establish the fact. Familial traits may be hereditary, or may be learned from generation to generation, or may result from a composite of heredity and learning. The mere fact of running-in-families does not tell which of these alternatives is correct.

The Constancy of Traits. Some very direct evidence concerning the relative plasticity or fixity of traits may be obtained by studying their constancy in adults, or their constancy of development in children. If a characteristic which can be measured or estimated remains relatively unchanged throughout a long period of an individual's life, in spite of varying circumstances and experiences, then that characteristic is a fairly fixed one. If, on the other hand, a trait tends to fluctuate widely from time to time, it is to be considered as relatively plastic, especially if the variations can be correlated with pertinent environmental changes. In the case of growing traits,

such as the heights or intelligence test scores of children, a slightly modified criterion is necessary. If such traits grow uniformly, showing few spurts or lapses; if the individual who is superior at one time maintains his superiority throughout the growing period, and if the individual who is inferior remains inferior; then the traits must be suspected of being relatively fixed. When such uniform sequences of growth are not discoverable, the characteristics are more probably plastic.

In the realm of physical traits, height and weight offer good examples of comparative fixity and plasticity. The short child at five years of age usually continues to be the short child at ten, and the short adult. The growth curves for height show remarkable uniformity and are influenced only by the most catastrophic environmental changes of disease, injury or malnutrition. Weight, by contrast, is much more plastic. Thinness or stoutness may run in families to some extent, but it is far more controllable and more subject to variation. If the weight growth curve of a child is examined, its fluctuations are seen to correspond to observable circumstances in the child's history. Here is the loss of weight caused by a series of winter colds; there is the marked gain of a summer at camp. Such data indicate that weight is a relatively plastic trait, frequently modified by ordinary environmental happenings.

The determination of constancy has been one of the chief research problems relating to intelligence tests. In a series of retests of the same children, the intelligence quotient (ratio of mental age to age) shows an average fluctuation of four or five points. This is a relatively small variation. The difference between the feeble-minded child and the average child is one of about forty to fifty points, and the difference between the merely normal individual and the average college graduate has been variously estimated as from fifteen to twenty points. The mentally brilliant child at six years of age maintains his superiority to the average in an approximately constant ratio. The dull child usually remains dull within a narrow range of variation. Under ordinary conditions, then, intelligence is a

rather fixed trait, though not absolutely so. Certainly, some extremes of circumstance such as blindness, deafness, or disease of the nervous system may affect the intelligence test scores very appreciably. Ordinary diseases such as the common infectious diseases of childhood, and also diseased tonsils, have been shown to have little or no effect on intelligence.

It is still possible that individual differences in intelligence are greatly affected by conditions of the prenatal environment or by circumstances of very early life which have not yet been identified and which we are as yet unable to control. Only a few years ago no one imagined that reflexes could be other than native; now we believe them to be prenatally acquired. Perhaps further research will reveal that the same is true of intelligence. At the present time, however, we must be content with the knowledge that from an early age, general mental ability is only moderately modified by ordinary variations of cultural environment.

The growth and degree of constancy of temperament, emotionality and adjustment have been difficult to determine because of the obstacles to the exact and quantitative measurement of these traits. There is no single test which will determine the merit of an individual's adjustments and hence permit comparison of his status from time to time. Such fragmentary findings as exist indicate that other personality traits remain much less constant than do intellectual traits. A typical study is that of McGeoch and Whitely (1927), in which the Pressey X–O Tests were administered to college sophomores, with repetitions of the test after forty-eight hours, forty-five days and ninety days to three different groups. Test IV of Form A of the Pressey tests, which is of greatest interest here, consisted of a list of one hundred and twenty-five words relating to possible worries. The subject is instructed to cross out the words relating to things that he has worried about. The score was the number of items crossed out, probably a fair indication of the degree to which the individual is a worrier. At the end of forty-eight hours, the consistency of the test was good, being indicated by a coefficient of correlation of .87 which is compara-

ble to the reliability of some mental and educational tests.[1] The retest at the end of forty-five days showed a correlation of .75 with the original testing, and after the elapse of ninety days, a correlation of only .51. These results show that the passing of time has a great effect on the tendency to worry or not to worry. This aspect of adjustment is indicated as relatively plastic and unstable, rather than comparatively fixed and constant as is the result of intelligence testing. Such other studies as have been made with personality tests or with observations show similar conclusions. Temperament and indications of adjustment do not show very constant values or consistent development, and are therefore greatly influenced by common environmental factors.

Adopted Children. Many critics of the constancy of the intelligence quotient have asserted that it may be due as much to uniformity of environment as to the operation of hereditary factors. It is certainly true that the cultural environments of most children tend to vary little during their school years, and that the lack of change in I.Q.'s may merely reflect this stability of environment rather than the effect of nature. The solution of the problem implied by this criticism is to observe the development of intelligence in children whose environments have been radically altered, children who have been adopted from homes of low cultural level into homes of appreciably better circumstances.

Two extensive studies of the intelligence of adopted children were reported in the Twenty-Seventh Yearbook of the

[1] The coefficient of correlation is a statistical measure of resemblance between two related quantitative measures. The two measures may be an individual's scores on two different tests, or on the same test taken at different times, or may be the scores made by two related individuals, such as brothers or twins, on the same test. Perfect correlation, the ultimate degree of resemblance, is indicated by a coefficient of 1.00. No relationship is indicated by .00. Although the interpretation of coefficients varies somewhat with the use to which they are put, the following suggestions are useful:

.90–.99	"very high"
.75–.89	"high"
.50–.74	"marked"
.20–.49	"present, but low"
.00–.19	"negligible or indifferent"

Negative coefficients indicate an inverse relationship, a tendency for one of the pair of scores to be high when the other is low.

National Society for the Study of Education. The two studies agree in some of their most important facts, but disagree in some points of interpretation. One research was performed at Chicago by Freeman, Holzinger and Mitchell (1928) on 401 foster children. Of these, 74 were tested before adoption, at an average age of 8 years, and again after an interval spent in foster homes at the average age of 12 years 2 months. The average intelligence quotient before adoption was 91.2, and after the four-year interval was 93.7, a gain of 2.5 points. Of the 33 children whose foster homes secured higher cultural ratings the gain was from 95 to 100, and of the 41 children who were placed in homes of lower status the change was from 88 to 88.1, a difference of no significance whatsoever. It was also found that the children who were younger at the time of the second test, being under the median age of 12–4 for the whole group, gained 5 points, while those children who were older gained nothing. Freeman added a "correction" to these figures, on the basis of data which indicate that the test used (the Stanford Revision of the Binet Tests) tends to overestimate the intelligence of younger children and underestimate that of older children. On the basis of this correction of 5 points, Freeman stated that the gain for the whole number of children was 7.5 points, for those in superior homes, 10 points, and for those in less favorable homes, 5 points. The use of this correction is not approved by all commentators. It is possible that selective factors operated, so that the better homes chose the better children for adoption. That the pretest I.Q. of the children entering the better homes was 95, while that for the children adopted in the inferior homes was 88, seems to bear out this assertion. The conclusion that children of initially good ability gain more from environment than do children of initially poorer ability is as justified as any other, though Freeman does not state this as a deduction from his data.

In the total group of Chicago children, 159 were siblings (brothers or sisters). The intelligence scores of pairs of siblings reared in different foster homes correlated only .25 as compared

to correlations of .50 usually found between siblings reared together. The correlation of children's intelligence scores with those of foster parents was .37. Freeman interprets the data of his investigation as strong evidence of the importance of environment in determining intelligence.

The second investigation, made in California by Burks (1928), studied a group of 214 children who had been adopted before the age of twelve months, and as a control, a group of 105 children who had been reared in their own homes, which were of equivalent social status to those of the adopted group. Burks found the average I.Q. of the adopted children to be 107.4. Since they had not been tested before adoption, there is no certain way of telling whether this represents a gain or not. On the basis of the occupational status of the real parents of these children, Burks estimated that their original average I.Q. should not have been over 100, and therefore claims a gain of 7.4 points as the result of adoption. The validity of this estimate is open to serious question. The correlation of the intelligence of the foster children with their foster parents was found to be .20, a much lower figure than that reported by Freeman, in spite of the fact that the California children had been adopted at a younger age. The correlation of intelligence scores between the own children and their parents was .52.

The changes found in the intelligence of adopted children are real and desirable, but small. No extremely dull child was made normal, no merely normal child was made a genius by the environmental changes studied. The research on adopted children confirms the conclusion that mentality is a fairly fixed trait, but denies the view formerly expressed by some writers that intelligence is wholly native and hereditary.

Because of the inadequacies of measuring other personality traits by quantitative tests, there is no very precise data concerning the effect of adoption on the quality of adjustment. Burks administered the Woodworth-Cady Personal Data Sheet, a series of questions designed to discover emotional instability, to a small number of the older adopted and own children in the California groups. The adopted children

showed no different average scores than did the own children. Some correlations were computed between the emotional stability of the children and certain estimates of traits of the parents, including "kindness," "tact," "sympathy" and degree of parental supervision of the children. These correlations were as high in the case of the foster parent and foster child relationship as in that of parents and their own children. Though the data are based on far too few cases to be very reliable, they suggest that these personality traits are more subject to environmental influence.

Evidence from enumerative statistics and from case studies is overwhelming proof that severely maladjusted children may be entirely cured by environmental procedures. An excellent sample of the typical findings is that of Healy, Bronner, Baylor and Murphy (1929), who report the changes in 501 children who were placed in foster homes because of conduct and personality problems. Of the main group of 339 children placed by private agencies, rather than by state agencies or juvenile courts, the outcomes were successful in 250 (74 per cent) of the cases and unsuccessful in 89 (26 per cent). Of 252 children placed because of delinquency, 173 or 69 per cent led to successful outcomes. Of 87 placed because of personality and habit problems, the outcomes were entirely successful for 77 or 89 per cent.

Among these children the most differentiating factor between success and failure was a diagnosis of mental deficiency or of "abnormal mentality or personality," made, of course, before the outcomes were known. Of the children judged as mentally normal 90 per cent were successful, of those of inferior mentality 70 per cent, of those of "abnormal or peculiar personality," 45 per cent were successfully treated. Just what was meant by the "abnormal or peculiar personality" diagnosis is not clear. Certainly, all children who presented problems sufficiently severe to cause placement in foster homes showed other than "normal" personality traits in some degree. The more severe diagnosis seems to imply only that the children so classified were of such markedly variant personality as to make

the outcome of treatment doubtful. It is obvious that children so selected would be less successful, on the whole, but it is encouraging to note that nearly half of even this group was successfully adjusted. The causes for failure in placement were many, and most of them related to the child himself, being the sheer inability to modify his behavior. Even so, many failures were due to influences such as family interference and incorrect placement, so that the total proportion of successes would have been higher with these extraneous factors eliminated.

The effect of "heredity" on success in placement was found to be small. Of children placed who had no known defect in their ancestors, 82 per cent were successful. There were 81 per cent successes for those who had parents one or both of whom had been diagnosed as mentally diseased or defective, and 70 per cent successes among those whose parents, one or both, were criminalistic.

The successes of these cases are, of course, not due to "mere environment" in the sense of a haphazard change of home. All were carefully studied and placed under circumstances promising the most hopeful progress. Most of the children received psychological treatment at an excellent clinic. The most important finding is that traits of conduct and of personality can be modified by planned procedures, and are therefore of relatively plastic and remediable nature.

Evidence from the Study of Twins. Further evidence concerning the plasticity and fixity of characteristics of behavior has been gathered from studies of twins. Twins are of two kinds, *fraternal* twins who develop from the simultaneous fertilization of two ova, and *identical* twins who develop from a single fertilized ovum which has divided early in embryonic life to form two individuals. Ordinary or fraternal twins have no more like heredities than do brothers and sisters. They may be of the same sex or of different sexes, and commonly show no greater resemblances than do other children of the same family. Identical twins, on the other hand, since they develop from the same germ cells, have identical heredities and are of especial interest for the study of genetic influences. Identical

twins may be distinguished at birth by the fact that they have a common chorion and a common placenta, and may also be detected later in life by a number of secondary signs such as identity of hair, eyes, ear formation and finger prints.

Several studies have compared pairs of identical twins with pairs of same-sexed fraternal twins. The hereditary factor is more alike for the identicals than for fraternals, but the environments of the former are not much more alike than those of the latter. The most extensive study, reported by Holzinger (1929), measured 50 pairs of identical twins and 50 pairs of fraternal twins in respect to a number of anatomical characteristics, intelligence, and several aspects of personality. Some of the correlations found are as follows:

	Identical Twins	Fraternal Twins
Anatomical Traits:		
Standing Height	.93	.65
Finger Ridge Resemblance	.97	.46
Weight	.92	.63
Intellectual Traits:		
Binet Mental Age	.86	.60
Binet I.Q.	.88	.63
School Achievement	.89	.70
Personality Traits:		
Woodworth-Matthews Questionnaire	.56	.37
Downey-Judgment	.31	.37
Downey-Motor Index	.51	.53
Downey-Co-ordinated Impression	.48	.53

In the first three traits, which are entirely anatomical, the identical twins resemble each other to a far greater extent than do the pairs of fraternal twins. In the next three measures, which are intellectual, there is still a significant difference in favor of identical twin resemblance. The last four measures of personality traits show little difference between the two groups, indicating the plastic nature of the characteristics concerned. The three pairs of correlations based on the Downey tests must be accepted with reservations, however, because of the relative unreliability of these measurements. Holzinger concludes that heredity is from four to seventeen times as important as environment in determining variability

in anatomical traits, and that heredity is twice as important in causing variation in intellectual traits. In regard to the personality traits measured, the data indicate that environment is the overwhelmingly more significant factor.

Instances in which identical twins have been separated at an early age and reared in different homes are of great interest to the heredity-environment problem. Müller (1925) and Newman (1929–1933) have reported several such cases of identical twins reared apart. Although the number of pairs so studied is not yet large enough to be of great statistical significance, a number of tentative conclusions seem justified. In anatomical traits the pairs resemble each other to about the same extent as do twins reared together. Even in diseases and in glandular disorders the similarities are striking in several instances. The result of intellectual comparisons is not so clear. Among the first ten pairs studied, six showed no significant differences in intelligence. The remaining four pairs differed in I.Q. by 12, 12, 15 and 18 points respectively. In each of these instances the more intelligent twin had considerable educational or cultural advantage over the other. For the entire ten pairs, the average difference in I.Q. was 7.7 points. This may be compared with an average difference of 5.9 points between identical twins reared together and of 8.4 points for fraternal twins. It is evident that intelligence depends on certain essential qualities of cultural environment, even with the genetic material held fairly constant. The attempt to estimate the effect of heredity on non-intellectual personality traits by the twin technique suffers from unreliability of measurement as well as from the small number of cases. In the ten pairs cited, three were said to be similar in temperament while seven were dissimilar.

The trouble with the studies of twins reared apart is that different homes do not necessarily provide radically different environments. The aim of seeing how persons of identical heredity fare under different circumstances is therefore only partly achieved. At present, it is not too difficult to evaluate qualities of physical and cultural environments and therefore to de-

termine the effects of differences in these factors on the twins. Since the aspects of environment that make for good or poor adjustive behavior are less readily recognized, the results of the twin studies remain somewhat ambiguous in regard to personality traits.

Another type of experiment which uses identical twins to control heredity may be performed by giving one twin special training which is withheld from the other. McGraw (1933, 1934) has reported a study made on twin boys. One was subjected to daily exercise from the age of twenty days; the other was given nursery care with as little handling and stimulation as possible. At an age of less than one year the experimental baby could climb a steep inclined plane, could go about on roller skates and could swim under water. Even greater than the differences in motor skill were those of attitude. The trained twin had greater self-confidence and showed no fear in situations that made the control child scream for adult assistance. While the permanence of these modifications is still problematical, the study seems to indicate the very large effect that training may have on some aspects of character and personality.

Some Conclusions and Practical Considerations. Although the evidence concerning the relative amount of variation in human traits ascribable to heredity and to environment is incomplete, it affords some basis for a point of view. There is no doubt of the influence of heredity on the structure of the individual, although various environmental factors modify even quite anatomical traits within certain limits. Mental ability, which is in part determined by the quality and number of nerve cells, is somewhat fixed, being only moderately modifiable by cultural environment. There is reason to believe, however, that the functional characteristics of personality and adjustment are the most plastic of human traits. Only when they depend on bodily or glandular structure are they resistant to formation and change by ordinary environmental influences. In the future it is probable that the question of the hereditary nature of a personality trait will be entirely replaced by a search

for a structural basis on which such a trait may depend. Only when an anatomical cause can be found for a variation in personality, can its relation to heredity be satisfactorily determined.

Even if some traits are greatly influenced by heredity, a resigned or fatalistic attitude toward them is not justified. "Hereditary" does not mean "unmodifiable." If a child has a club foot, the parents do not give up in despair, but do the best they can to have the defect remedied. Similarly, the psychologist, teacher or social worker should not ignore the possibility of treating a condition because it is supposedly hereditary. Such an attitude is only a confession of ignorance or a rationalization of incompetence. Even relatively fixed traits may be modified in a worthwhile degree if the proper environmental influences are brought to bear.

SUGGESTED READINGS

The general problem of the chemical integration of the body is considered by Cannon, *The Wisdom of the Body*. The endocrine glands and their influences on behavior are described in Hoskins, *The Tides of Life*, a book that is as delightful as it is authoritative. A shorter summary is Hoskins' chapter on "Endocrinology," in Bentley and Cowdry, *The Problem of Mental Disorder*. The most complete reference on the endocrine glands is, at present, Engelbach, *Endocrine Medicine*.

The influences of other organic factors on personality are evaluated in several chapters of Bentley and Cowdry, *op. cit.*, and in Moss and Hunt, *Foundations of Abnormal Psychology*.

Studies of the influence of heredity are discussed in Schwesinger, *Heredity and Environment*. The *Twenty-seventh Yearbook* of the National Society for the Study of Education is entirely devoted to reports of research on this topic. An excellent reference on heredity in general is Jennings, *The Biological Basis of Human Nature*. Evidence of the effect of environment on physical characteristics is given by Sanders, *Environment and Growth*. Healy and others, *Reconstructing Behavior in Youth*, evaluates the effect of a change of environment on problems of personality and conduct.

CHAPTER XIII

THE DEVELOPMENT OF PERSONALITY TRAITS

DEVELOPMENT AND MALDEVELOPMENT

Habit and Personality. The personality of an individual has been defined as his persistent tendencies to make certain kinds or qualities of adjustment. Aside from the influence of the structural and organic factors considered in the preceding chapter, these tendencies arise chiefly through the establishment of habits. Habit formation is synonymous with learning. The principal characteristics of an individual's personality are the residuals of his experiences and of the responses that he has found successful in the past. If a person reacts adjustively or nonadjustively; if he typically responds by aggressiveness or by withdrawing, he does these various things because he has learned to do so. Personality traits develop by a gradual process of learning, which begins at birth and which never entirely ceases throughout the life of the individual.

Many factors contribute to the efficiency of learning. These are, in general, the same for adjustive learning as for any other variety. Three of the most important determiners of learning are *opportunity*, *guidance* and *success*. If a child is to learn arithmetic, he must meet situations in which its use is demanded, he must have the desirable procedures indicated to him, and he must accomplish them with reward or with some other mark of the completion of motivated activity. These same conditions underlie the acquisition of adjustive habits. A child must associate with other children to learn the fundamentals of social adjustment. If he is unduly protected from difficulties he will never learn how to meet them. If, in contrast, circumstances present adjustive troubles far beyond his ability, inferior types of solution are inevitable. Guidance is probably even more important in the formation of personality

than is opportunity. If parents or other persons of influence solve their adjustment problems in inadequate ways, these modes of response will be assimilated by the child, both through the suggestion of solutions and because the parental habit represents the approved method of response. When a habit of personality, either desirable or undesirable, is found to be satisfying or tension reducing, it will tend to be perpetuated. This perseveration of childish and inadequate adjustive patterns which once had utility is one of the most serious causes of unfortunate characteristics of personality.

In the description of the development of personality traits which follows, the emphasis on early childhood will be noted. Although some personality traits may be formed in adult life, the overwhelming proportion of them, both in number and importance, are of childhood origin. The personality development of the child is the chief predisposing cause of the adjustive behavior of the adult. Because the fundamental adjustive problems are all met rather early in life, and because habits of adjustment constantly have to be exercised in every situation that the individual meets, they tend to become fixed at an earlier age than do many other habits. This relatively early crystallization of normal personality traits does not imply that they cannot be changed at a later time. The modification of adult personalities, however, requires strenuous effort and is likely to be only partial in its success.

Developmental Defects. Inadequate personality arises from the establishment of unfortunate habits of adjustment. Conspicuous among defective habits of personality and deserving of a systematic description are those which may be termed *developmental defects.* These are either habits that were adequate at some stage in the childhood of the individual, but which should have been outgrown and discarded, or else habits that normally might have been expected to appear in the course of the individual's growth and training, but which have not been acquired. An example of a developmental defect of the first type is excessive dependence on parents. A very high degree of such dependence is normal in infancy, but is out of

place in the behavior of an adolescent. A defect of the second kind may be illustrated from the field of vocational choice. If a young man of twenty-five has as yet no aims for a career, he has failed to develop a characteristic that usually is acquired by this time. The two classes of developmental defects are interdependent in considerable degree, for the failure to acquire a new habit is often the accompaniment of the failure to discard an old one. Developmental defects may arise from circumstance or from improper guidance, but they are most frequently due to the persistence of early adjustments to which too much value has been attached.

Most important among developmental defects are those which relate to the *emotional development* of the individual. In the description of the varieties of adjustive behavior, the importance of emotion in maladjustment has been prominent constantly. Emotional responses are tension-producing; they are strong and relatively permanent and not as subject to rational control as are other reactions. Intense emotional states inhibit constructive trial and error and are therefore especially destructive to adequate adjustment. Emotional maldevelopment consists of the formation of undesirable emotional habits, either in too great an extension of the stimuli for emotion, or in too strong and primitive a type of response. For convenience, the principal developmental defects of emotion may be considered in four groups: (1) maldevelopment of the reactions to frustration ("*rage*"); (2) maldevelopment of the reactions to pain, punishment and criticism ("*fear*"); (3) maldevelopment of the responses to love, approval and protection ("*love*"); and (4) maldevelopment relating to sex reactions in the more restricted sense.

Developmental defects that have negligible emotional components, such as illiterate speech or bad table manners, may contribute indirectly to problems of adjustment, but they are seldom of primary importance.

Perhaps even more serious than the developmental defects relating to emotion are those which concern the *integration* of the individual. It has long been noted that maladjusted per-

sons are uneven in their behavior, that they do not co-ordinate their motives and their habits effectively. They are erratic, unreliable, defective in their perceptions of situations and in their discriminations between courses of action. These traits, which may be termed faults of integration, are learned behavior. Both lack of opportunity to practice effective co-ordination, and experiences which tend positively to destroy it, contribute to inadequate integration. This handicap is the most conspicuous of the developmental defects of the maladjusted personality. Two attacks on the problem of integration, one based on case studies and the other on some experiments, will be made later in the chapter.

THE MALDEVELOPMENT OF EMOTIONAL PATTERNS

Reaction to Frustration. Conspicuous among the developmental defects of adults and adolescents is an immature type of reaction to frustration. Whenever thwarted, some individuals show a childish reaction of rage, varying in intensity from an actual tantrum to such milder forms as flouncing out of the room, pouting, or frowning. Even when these external signs are inhibited, the rage reaction may be present in the form of an increase in emotional tension. Popular opinion recognizes that these behaviors are developmental defects, for an individual is said to act childishly when he shows excessive rage.

The early development of reaction to frustration has already been traced in Chapter II. When an infant is subjected to overstimulation in the form of restraint he responds by an over-reaction, which includes the intense visceral state of emotion and certain strong and unco-ordinated movements that are usually interpreted as struggling. In infancy this emotional pattern is generalized and is not clearly differentiated from that of fear. The earliest unmistakable rage responses are made to the physical prevention of bodily movements. Later, the stimuli become extended by conditioning to include a number of substitute and symbolic restraints. Goodenough (1931), in studies of the direct antecedents of anger reactions in young

children, found that the enforcement of routine physical habits (often involving restraint), direct conflict with adult authority, personal inability to achieve some desired end, and conflict with other children over possessions or activities, were the most common causes. She also discovered that children who had been ill, children in whose homes there were larger numbers of adults, and those who were reported to be "given in to" more often, had the greater number of outbreaks of anger. The intense rage responses of childhood are of some temporary utility, for the violence of the motor activity assists in reducing the emotional tension. In some cases, especially when the conflict is with other children, the rage behavior may achieve its end by subduing the antagonist, and hence is individually adaptive, although not socially justifiable.

In the normal course of development, the primitive forms of rage are modified by the substitution of more effective forms of response. The best substitute for anger as a response to thwarting is a *problem-solving attitude*. The development of this habit may be seen by contrasting the behavior of a two-year-old and a ten-year-old in response to a toy that will not operate. The younger child makes unco-ordinated movements of increasing violence which may result in the destruction of the toy. The older boy is likely to investigate to see why it does not work properly and will persistently try to repair the defect. The problem-solving attack is often discovered by children in the trial and error process by which they learn their habits of personality. If a strong rage response to frustration is found to be entirely ineffective, it will be dropped. This is a typical example of experimental extinction, the process by which the useless components of behavior are eliminated. Studies of children show a decreasing occurrence of rage tantrums through the years of childhood, largely due to the spontaneous discovery of their uselessness. Suitable guidance may assist in the extinction of strong rage responses. Situations should be provided that encourage constructive trial and error. In the case of the young child, the choice of proper toys is important. Toys that get out of order because they are poorly constructed

or because they are too complex for the comprehension of the child, tend to promote unco-ordinated rage behavior. Play materials such as blocks, sand, clay, paints and construction toys, properly chosen for the age level of the child, provide opportunities for learning to make a constructive attack on problems. The choice of a child's toys may seem a trivial matter, but it is not. Attitudes formed in play transfer in considerable degree to the other social and personal attitudes of the individual. There are many other ways in which adults may assist a child to develop the problem-solving attitude. The choice of toys is only a convenient example of one technique available for this purpose.

Another means for displacing primitive rage behavior is the substitution of *social-approval* satisfactions. If the child is praised for making constructive efforts against frustration or for enduring it quietly when it cannot be relieved, he will discover that rage is not only useless but also less socially acceptable than its alternatives. The *example of parents* is also important, for a calm attitude in the face of difficulties is likely to be assimilated by the child.

Probably the chief factor in the maldevelopment of rage behavior is the attachment of utility value to it, by giving in to a child's tantrums. If a child shows rage when denied a privilege and the parent afterward yields the desired thing in order to stop him from screaming and kicking, the tantrum has been rewarded. By such a procedure parents may teach a child to have paroxysms of emotion at every restraint, for the successful behavior will be perpetuated as in the case of all adjustive learning. A second common cause of maldevelopment of the reaction to frustration arises when a child never meets obstructions because the way is made too smooth for him. This form of overprotection may temporarily prevent outbreaks in early childhood. Eventually, when the youngster joins groups or goes to school, he will encounter difficulties to which he reacts with emotion, because he has learned no other method for dealing with them. The maldevelopment of rage may also result from a lack of the positive factors previously considered, such as

an absence of training in problem solving. Parental example is especially important. Many cases of serious tantrum behavior in children have been traced to the fact that the parents, themselves emotionally immature, have tantrums at each other!

The guidance of the tendencies that originate in the primitive rage emotion does not require that this trend of behavior be eliminated entirely. As was elaborated in Chapter IV, the motives of mastery arise from desirable modifications of the responses to restraint tensions. If a child is continually thwarted and if at the same time his natural rage responses are suppressed by punishment, he may develop into an effortless and unmotivated individual, thus predisposed to ineffective living. What is needed is not the elimination of rage tensions, but the direction of the adjustment to them into milder and more controlled activities.

Closely related to the maldevelopment of rage reactions is that of the self-assertive tendencies in general. Maldevelopment of self-assertion is seen in individuals who must always be the most prominent person in every enterprise, and who will play only at games in which they can win. Sometimes such aggressive attitudes are compensatory mechanisms; sometimes they are the direct result of inadequate training. It is commonly recognized that the desire to "be the biggest toad in the puddle" is childish. If a child always has his own way and if he is constantly displayed and praised, he may be taught an unfortunate attitude of egocentrism which predisposes him to later maladjustments. The prevention of this condition, which is easier than its cure, consists in the discovery by the individual that his own ends are gained best by yielding at some points. A proper balance between the tendencies of mastery and those of submissive co-operation is necessary for well-rounded adjustment.

The desirable development of reactions to frustration is not merely a matter of convenience in child training. Its significance reaches far beyond the temper tantrum. Developmental defects of this type underlie many social, occupational and especially marital maladjustments. An immature reaction

of rage inhibits constructive thinking and hence makes the individual less effective in critical situations. Adults who respond to thwarting in this way make life miserable for those about them. This leads to retaliation and isolation, preparing the ground for the erection of defense mechanisms against a hostile world.

Reactions to Pain, Punishment and Criticism. The earliest fear responses of infancy arise from sudden overstimulation, and are at first not easily distinguishable from those of rage. As the child becomes more mature, the pattern of fear becomes more definite and seems to be the natural response to sudden and violent situations to which the individual has no habitual method of adjustment. Strong fear has little or no utility at any time in life. It is possible that it can be reduced in intensity and restricted to really harmful stimuli, thereby promoting a useful caution. Danger of bodily harm, contagion and poisons, and extreme antisocial behavior, have been cited as stimuli of which individuals may properly be afraid. Caution requires accurate discrimination, however, and strong fear contributes little to its development. A child who is thrown into a panic of fear by the approach of an automobile is more likely to run in front of it than is a child who is able to evaluate his danger calmly. Fear seems to be the one human trait of which the complete elimination would be most desirable.

In the course of development from childhood to maturity some fears are overcome by greater familiarity with the situations causing them, while others are acquired both by direct conditioning and by indirect training. The chief means for guiding the desirable development of fear behavior are *prevention* and *reconditioning*. The prevention of fear-conditioning does not mean shielding the child from all situations that might frighten him. Such a procedure is not only a practical impossibility, but prevents the building of habits of overcoming fear. Fear is less likely to arise if a stimulus appears gradually rather than suddenly, if the child is forewarned concerning it, and if the accompanying circumstances are familiar and reassuring. These techniques can be applied to prevent children from

becoming afraid of such stimuli as noises, rough play, and the dark, or of riding in elevators and automobiles. It is unnecessary to say that children should be kept from being frightened by threats of bogey-men, monsters, criminals or animals. Such suggestions are all too frequently made by thoughtless adults, often for the purpose of controlling the child by fear. Even with the best precautions, some fears are likely to become conditioned. The process of reconditioning is then necessary, and may be achieved by making the child familiar with the feared stimuli under reassuring circumstances, or by associating pleasant responses with them.

The principal maldevelopments of fear are its attachment to specific or to general situations in such a way as to evoke disorganized and maladjusted behavior whenever the stimuli are met. Simple specific fears, such as fear of dogs, require no further description. The more complicated fear patterns of a fairly specific nature constitute phobias, and have been treated at length in Chapter VIII.

Generalized fear reactions, in which a learned fear becomes attached to a broad class of stimuli, present more serious and permanent psychological problems. If a child comes to fear his father because of loud shouts, threats and painful punishment, he may develop a very disabling attitude toward all persons who represent authority. By this process he may develop fear tensions in the presence of teachers, physicians, officers and employers. Fisher and Hanna (1931) describe a typical case of this nature. A young man, a barber by trade, had been strongly intimidated by the harsh treatment that he received in childhood from his father and from his eldest brother. He continued to live with the brother, who dominated him completely. This man had been unable to keep any position because of a conditioned fear response to authority. Whenever a prosperous and dominating looking customer would take his chair, he became so agitated and inefficient that the customer would leave dissatisfied, often complaining to the manager. The barber was quite competent with ordinary looking individuals. Although not often as pronounced as in this case, a

generalized fear of authority is quite common, probably because of the prevalence of repressive methods of discipline. Fear of authority directly causes academic and vocational maladjustments of varying degrees. In more serious forms, it may constitute the predisposing emotional tension that underlies a maladjustment of any sort. Other generalized fears, such as fear of men or of women, fear of public appearance, or fear of being watched while at work, may originate in the same manner as does fear of authority, or they may be residuals of humiliating past failures in these situations.

The most disabling of the maldevelopments of fear is the attachment of this response to any form of criticism. Fear of criticism is one of the most important factors in the creation of the attitude of inferiority, which is the predisposing cause of all sorts of defense mechanisms. It originates from the association of scolding or derision with adequate stimuli for fear, such as pain, punishment or hopeless frustration. The technique for disciplining children which applies physical punishment along with scolding provides an almost perfect situation for building a conditioned response. Since the fear response to beating, confinement and loud shouts is made at the same time that the criticism is heard, the child comes to react to the substitute stimulus with the same emotional response. This association of punishment with verbal disapproval is so common that none but the most fortunate escape its influence. The more frequent and severe the training, the more disabling is the reaction learned. Individuals who have been too unfortunately trained in this respect cannot make constructive adjustments to criticism or to social disapproval. They respond to such stimuli with emotional tensions, which may be reduced by such devices as circumstance may offer, or which may lead to nonadjustive reactions. The association of fear with criticism may, of course, be learned in other relationships than that of parent and child. Punishment or failure in school, accompanied by criticism, or persecution by child associates, may conspire to achieve the same result.

The effects of any of the maldevelopments of fear are aggra-

vated by repression, which has already been described as an inadequate attempt toward adjustment by the inhibition of response to a fear-provoking situation. The habit of repressing is a developmental defect of great seriousness. The chief source of repression is a lack of cordial relationship between a child and his advisors that causes him to be rebuffed or punished when he attempts to tell of his fears or worries. The connection between this difficulty and the general maldevelopment of fear is obvious. Repression may operate generally to prevent any seeking of advice, or may be limited to particular fields, such as that of sex, in which inhibition has been especially strongly established.

Reaction to Love, Approval and Protection. The emotional responses of the type that have been designated as "love" have their origin in the satisfaction of the infant's organic needs and in mild skin-stroking stimulation such as fondling, petting and caressing. To these stimuli the child reacts adiently, with responses that tend to strengthen and to perpetuate the stimulation. The adient reactions soon become conditioned to other stimuli, so that words, gestures and other substitute symbols elicit approximately the same response. Training of this sort results in the creation of a special attitude, which may be termed *love-attachment*, toward the persons who relieve the child's needs and administer satisfying stimulations. These emotional attitudes, or "sentiments," are not peculiar to the love emotion alone, for analogous habits may be formed toward persons who call forth rage or fear. The love-attachment, however, seems especially significant in relation to developmental progress in all directions.

The desirable development of responses to love and protection necessitates, above all other considerations, that they be kept flexible and susceptible to progressive change. There is a more clearly defined developmental sequence in the case of love behavior than in the other emotional patterns. The infant's responses to approval and protection are not suitable for the older child; the child's typical attachments are inappropriate for the adolescent or adult. The normal development of love responses depends on the avoidance of too intense attachments

in the early stages. If these become excessively satisfying, progress will be retarded.

The most common maldevelopment of the love emotions is caused by too much stimulation of these responses, resulting in excessive attachment and overdependence. The fondling and petting of little children is, unfortunately, a widespread and not disapproved form of amusement in most social circles. This is performed because of a sentimental reaction to the infant's amusing ways, and because of a pleasurable effect on the other participant. To hold and kiss a young child is stimulating in a broadly sexual way for the person who does it, as well as for the child. An excess of love attention is especially likely to occur when one parent is thwarted in adult love relationships either by personal maladjustment, or by separation, divorce or lack of marital affection. Such situations as these may cause the parent to have a love-attachment to the child which serves in place of the frustrated adult adjustment. The earliest ill effects of excessive love stimulation are seen in infancy itself. The baby becomes adapted to this state of affairs and tends to cry and fret when it ceases. The overcaressed child is unhappy whenever alone and not the center of attention, and becomes a nuisance to others as well, because of the amount of his wailing.

A more permanent result of excessive love-conditioning is that it forms too strong and lasting an attachment to the parents, which makes it difficult for the individual to break away from them when childhood is over. This is a typical example of a developmental defect, the continuation of an adjustment into an inappropriate period of life because of its undue importance in the whole scheme of the individual's adjustive behavior. A further difficulty is that a large amount of attention and caressing leads to an excessive desire for sympathy and social approval, which are the verbal equivalents of fondling. The kind of person who must always be reassured that he is doing the right thing is seeking a substitute for accustomed parental coddling. An exaggerated desire for sympathy is likely to make the individual feel sorry for himself when he does

not receive it, and hence leads to adjustive aches and pains and even sometimes to invalidism. Overstimulation of the love type is therefore an especially important predisposing cause of ailment-adjustments and of some nonadjustive states.

Maldevelopment that results in overdependence and an excessive need for protection is closely related to defective development of the love responses, and is an equally important factor in predisposing an individual to maladjustment. Many parents prolong the infancy of their children because of the satisfaction that they receive from caring for a helpless infant, or because they are so inflexible that they cannot see the child's gradually increasing ability to take care of himself. Such parents "do not want to give up their baby," and instead of promoting the development of traits of independence, they refuse to recognize the maturing of the child and hinder his progress. This results in the attitude of dependence on parents, inevitable in the earliest years, being carried into later life. Overdependent persons are severely handicapped in adjustive behavior. Instead of responding to thwarting by independent trial and error, they turn to someone for advice and protection and expect the way to be made smooth for them. They often adopt parent substitutes, depending on teachers, on other adult leaders, or on schoolmates for decisions as to education, recreation, and associates. They attach themselves to one person after another, becoming sadly dependent on each in turn. Overdependent youngsters are likely to suffer from social maladjustment. Other children are quick to note the "mama's boy" and to make life miserable for him. Much unhappiness is caused by the fact that all persons who do not give parent-like special consideration to the overdependent individual may be regarded as unfriendly, prejudiced or even as definitely plotting against him. Serious feelings of persecution may arise in this way from early overprotection and love stimulation. If, sooner or later, the individual has to give up being a child, he must face all at once the adjustments that should have been made gradually. This is often too much for his immature adjustive ability, and is probably one of the chief predisposing causes of persistent

nonadjustive reactions such as "nervousness" and "nervous breakdowns."

Relationships Between Emotional Tendencies. The responses of rage, of fear and of love that have been described do not develop in isolation from one another, but are inseparable aspects of a unified and continuous process of the growth of personality. The same situations that cause the maldevelopment of one emotional tendency usually affect the others as well. There is a very close relationship between the development of rage and that of love. Not only does the love-spoiled child seek stimulation and attention, but he commonly indulges in tantrums when these are withheld. The same overprotection that causes dependence on parents also hinders the development of the problem-solving attitude toward thwarting which was described as the most effective substitute for rage behavior. Sentiments, or emotional attitudes toward persons, also usually involve more than one emotional trend. An antagonistic action on the part of a loved person may call forth an extreme emotional response, whereas the same behavior in a person to whom no attachment had been made might be regarded objectively and unemotionally.

Fear is also related to love and protection. The overdependent individual does not learn how to adjust to frustrations alone, and is therefore fearful in the absence of his accustomed protectors. A fear of insecurity may develop upon the withdrawal of love stimulation to which the individual has become adapted. Indeed, such a fear may arise from too little affection, just as overdependence may result from an excess of it. As in all psychological problems, a moderate degree of development of all of the emotional attitudes is desirable. Underdevelopments of self-assertion, of submission, or of love may be as harmful as their overdevelopment.

Another significant relationship between emotional tendencies may be seen in the problem of *emotional consistency*. If a child receives excessive love and affection from a parent at one time, and is subjected to fear because of harsh treatment at another, he can develop no harmonious emotional attitude toward

the source of these contradictory stimuli. Such conflicts often result in a lack of integration and in various nonadjustive attitudes, as will be pointed out in a later section of this chapter.

The Development of Sex Behavior. Certain aspects of the "love" behavior of the infant and child merge by imperceptible degrees into the sex behavior of adolescence and adulthood. Maldevelopment of these tendencies in early life may seriously warp the sexual adjustments of the later period, and may lead to secondary maladjustments of a general nature as well. The importance of the sphere of sex, combined with the scarcity of reliable information, has caused more worthless and baseless material to be written concerning it than is the case in any other field of human behavior. Until sex can be investigated with the more reliable methods that have been used in studying rage or fear, conclusions are likely to be speculative. The outlook for exact research in sex is not very hopeful, for several competent psychologists who have tried to make investigations in this field have been dismissed from their positions because of the popular prejudice against the discussion of sex. The best that can be done at present is to interpret our limited knowledge in terms of sound and objective psychological principles, avoiding fanciful and far-fetched hypotheses as much as possible.

The love and sex life of the individual goes through a number of distinguishable phases. The earliest phase is a short-lived one in early infancy, of pure bodily pleasure. A second phase centers around parent-attachments, being achieved by the processes of love-conditioning already described. In later childhood the wider range of activity of the individual usually causes a weakening of parental love ties, resulting in a relatively nonsexual period. Finally, in adolescence and adulthood, sexual attachments are normally made to unrelated persons of the opposite sex. The extent to which sexual development may be influenced by organic or inner conditions is not definitely known. Only one thing is certain, that environment and training are the most important determiners of sexual development, in the psychological sense. It is probable that the maturing of the sex glands in adolescence plays an important part in the final

stage. The earlier stages, however, are not a definite and predestined series of steps decreed by original nature. They are the result of growth and learning, and primarily psychological in nature.

The principal developmental defects of sex are the continuation of *auto-erotic* or self-stimulating sexual practices, excessively strong *parent-attachments* that inhibit further normal development, and the attachment of sexual value to members of the same rather than of the opposite sex, which is *homosexuality*. All of these are due to developmental difficulties of kinds not essentially different from those which underlie defective development of rage, fear or love responses.

The little child's love of its own body is axiomatic. Only through his own sensations can he experience pleasure. It is probable, however, that *auto-erotic* practices in older children and adults are not simply failures to progress from the infantile stages of development, but are rediscoveries of self-pleasure made at a later time. They usually start as a discovery of a pleasurable bodily activity. Exploration of the possibilities of the sex organs is made by practically all children and is as normal as the discovery of their toes. In many adults the memory of such activities has been repressed by association with shame, but the proportion of persons who remember childhood masturbatory attempts is large. They are believed to be entirely harmless. Masturbation is likely to be retained by adolescents and adults of both sexes if they are thwarted in other adjustments, including some not directly sexual, such as the lack of normal social activity, or if the habit has become of great utility as a tension reducer. There is no doubt that sexual activity may be generally tension reducing, and that it reduces, in some cases, tensions which are not primarily sexual, such as those of fear. Bagby (1928) cites several cases of masturbation as a general tension-reducing device. The principal ill effects of auto-erotic practices are not physiological but psychological. There is no evidence to support the popular superstitions that masturbation causes general weakness, loss of sexual powers, or skin blemishes. It positively never can cause

insanity, as is widely believed. The first harm from masturbation comes from the feelings of shame and guilt which the individual feels because of the social disapproval of the practice. These are a very frequent predisposing cause of attitudes of inferiority. A second difficulty lies in the fact that masturbation reduces a strong drive-tension, the energy of which might be directed into other activities. An individual who is in this very direct sense "self-satisfied" is probably less likely to seek social satisfactions of a broadly sexual character.

Parental attachments arise through the process of the conditioned reaction, as has been described. Although not of strictly sexual character in childhood, they are of great emotional strength. The usual causes of excessive parental attachment are those described in the preceding section; erotic overstimulation by the parents, and circumstances which cause the child to be dependent, such as illness or weakness. If these conditionings are too strong, or if the dominating quality of the parent hinders normal development to the other stages, the parent-attachment may be carried into adolescence or adulthood. This unfortunately common condition underlies many serious maladjustments. Too strong a love for a parent may prevent the individual from making exploratory acquaintances with young persons of the opposite sex. Often they look for parental qualities in a prospective mate, falling in love with a mother-substitute or a father-substitute. Frequently a parental attachment leads to intense emotional conflict, the individual being unable to reconcile the love for parents with the urge to make a normal adult sexual adjustment. A case of this type, described by Fisher and Hanna, illustrates some of the usual symptoms.[1]

> X. Y. is a young man of thirty, single, intelligent, and a graduate of a first grade engineering college. At the time when he came to the writers he was employed by a prominent engineering firm in New York City.
>
> This man complained of periods of extreme depression and of

[1] From Fisher, V. E., and Hanna, J. V., *The Dissatisfied Worker* (pp. 157–158). By permission of The Macmillan Company, publishers.

suicidal impulses. During the few times we saw him the following facts were brought to light. He lived at home alone with his widowed mother who still treated him in all respects as if he had been a boy of twelve or fourteen. Thus she always asked where he was going when he left the house, with whom he was going, and what time he would be home. She showed constant and excessive concern lest some woman might injure the moral integrity of her son.... She continually cautioned him against taking undue chances with designing women and all in all would have kept him always at her side could she have done so. On his part there was but a mild passive sort of resistance to his mother's excessive dominance. Moreover, whenever the slightest things went wrong with his work he would always hurry home to his mother and tell her of his troubles.

Despite the mother's careful vigilance X. Y. was seduced by a woman somewhat older than himself, the woman always taking the active role in their attempted intimacies — X. Y. was apparently almost if not quite impotent. X. Y.'s seduction was naturally kept a close secret from his mother — perhaps the first secret of any significance to him that he had ever kept from her — and on the basis of his unusually strong attachment to her, feelings of guilt and infidelity developed. These feelings bred his periods of depression and suicidal impulses. He... felt hardly fit to live, although, to be sure, he did not consciously attach his depression and suicidal impulses to his "unfaithfulness" to his mother.

X. Y. had been trying for some time to decide whether or not he should marry the woman with whom he had been intimate, not as a moral obligation but rather because she seemed to care somewhat for him and he felt that he reciprocated her feeling to some extent. His mother, however, stood very much in the way. She always disliked any woman whom X. Y. mentioned and furthermore it seemed to him hardly fair to bring another woman into the same house with his mother — he refused to consider the matter of living apart from his mother.

Cases such as the one just cited are often used as evidence to support theories, such as the Freudian one of the "Oedipus complex," that the normal child passes through a stage in which he is sexually in love with the parent of the opposite sex. This is not necessarily a general truth. Many, possibly an equal number, of mother-daughter attachments exist, but escape notice because they do not so strikingly conflict with

social customs. Economic factors must also be considered, as the mother is the parent most likely to need financial support, and the son the one usually most competent to provide it. Such sexual tinge as a parent-attachment may have is usually provided first by the parent, who projects an adult sexual attitude into the relationship with the child. Of course, cases of milder degree are the ones more frequently encountered, in which the parent-attachment is shown only by undue consideration, affection and dependence.

Later childhood and early adolescence is a relatively non-sexual phase of development. There is some tendency for children of the same sex to seek each other's company during this period, and to feel antagonistic toward the opposite sex. This is probably due to conventions that make certain forms of play proper for boys and others for girls. In recent years when girls have been socially approved participants in more active play than was formerly allowed, this distinction has been significantly weakened. The strongest love relationships typical of this period are "chum" and "crush" attachments that may arise between children of the same or of opposite sex. If equal opportunity were provided, children would probably be quite indiscriminate in such "crushes," hence to describe them as homosexual is probably an error in most cases. These attachments are often real love relationships, however, showing such common symptoms as a constant desire to be with the other, and jealousy when a third party intervenes. If this type of attachment does not become too deeply satisfying it is not dangerous to development, and usually dissolves when the heterosexual interests of adolescence appear.

The phenomenon of *homosexuality* is a love-attachment between two persons of the same sex. Few conditions of behavior are so misunderstood or so despised in popular opinion. Homosexuality is not a "sign of degeneracy" nor is it hereditary or usually dependent on organic factors. It is an inadequate sexual adjustment, often a maldevelopment. In most cases it consists only in feelings of affection and attachment for persons of the same sex, without overt sexual acts, and of a distaste for

the opposite sex. Homosexuality varies in degree, however, and sex acts occur in the more pronounced cases. This maladjustment is probably more common among women than among men, since social conventions allow women to be more demonstrative toward each other without arousing suspicion.

Homosexuality may be caused by a number of quite varied accidents of experience. One common cause of this form of attachment is the failure of an adolescent in his or her early experiences with the opposite sex. Being rebuffed or feeling inferior in this newly attempted relationship, the individual may inhibit sexual responses entirely, or may return to a satisfactory homosexual attitude that may have been incipient in the attachments of the preadolescent period. Segregation of boys or of girls is another contributing cause of homosexuality. Boarding-schools for boys or for girls alone abound in "crushes" that arise because the sex drives of the youngsters can find no other outlet. Most persons subjected to this experience readjust when out of school, and are not permanently affected. A minority, for whom the homosexual satisfaction has been especially intense, or who are unable to make a desirable heterosexual adjustment for some reason, may carry homosexuality into adulthood. A feeling of hatred or of fear toward the opposite sex may lead to homosexuality. Feelings of this kind are sometimes inculcated by parents who are themselves sexually maladjusted, or may arise from the observation of an unhappy home. Strong attachments in childhood to the parent of the same sex, often accompanied by an aversion to the parent of the opposite sex, are believed to contribute to homosexuality in some cases. Sometimes homosexuality is created in boys and girls by suggestion and seduction by older persons already fixed in this attitude. If a young person's first great sexual satisfaction occurs in a homosexual situation, a conditioning may be formed toward a person of the same sex as the more desirable love object. Even this list of the causes of homosexual attachments does not exhaust the possible sources of this conduct. All cases of this maldevelopment, however, are probably explainable in terms of conditioning and adjustment.

Confirmed homosexuals are likely to be generally maladjusted, either due to emotional conflict concerning their sexual habits, or because they are cut off from many aspects of normal social participation. Well-established homosexual tendencies are said to be difficult to cure, chiefly because the person affected is satisfied with his form of adjustment, often defending it with elaborate rationalizations. A radical change in motivation is necessary to modify the response. In some instances, homosexual tendencies may exist in a person who, because of the operation of repression, is not aware of their nature and significance. Severe anxiety may occur in these cases, which is relieved only on sexual readjustment.

Just as sex responses can be conditioned to members of the same sex, so they may be conditioned to many other situations. This occurs in normal development, for certain words, stories, pictures or articles of clothing are almost universally stimuli which arouse sex. When substitute sexual stimuli are unusual in nature and in the strength of the response that they can arouse, the condition is termed *fetichism*, the substitute stimulus being a "fetich." In some relatively uncommon cases, sexual responses are elicited by shoes, gloves, hair, certain animals, or by various personal peculiarities such as lameness or obesity. These attachments would seem very mysterious indeed if it were not for the knowledge of the fact that, by conditioning, almost any stimulus may be connected with almost any response.

If all of the developmental hurdles are surmounted, the individual arrives at the normal heterosexual interests of the adult, but even in this stage developmental defects may occur. The most common of these is the conditioning of sex with fear or shame. This may be caused by the unduly severe punishment of early sexual exploration of the child, or to shame-suggesting attitudes of adults in regard to sex. In some cases direct fear conditioning may occur, in girls from what they may regard as a narrow escape from attack, or, more frequently in boys, from fear of venereal infection. Improper or inadequate sex education may implant attitudes of fear or shame in regard to sex

which are difficult to overcome. These may result in the arousal of the fear emotion to sexual stimuli. Since the autonomic innervations of fear and sex are antagonistic, these attitudes are incompatible. Such a person suffers from frigidity, in the case of women, or from psychological impotency in the case of men, which are conditions of the absence or weakness of sexual satisfaction or ability. When individuals with these unfortunate conditions are married, the lack of sex outlets and the feelings of inferiority engendered, may result in secondary ailment-adjustments such as "nervousness," aches and pains, dizziness, invalidism, or "breakdowns."

The mental hygiene of sex is not simple, but two of the most common errors are relatively easy to avoid. First, parents should treat sex as a commonplace topic and give sex information to children when they request it, without conditioning the child to mystery, secrecy, shame, or disgust. Second, parents should know of the normal sequence of sex development and should aid it in every way. They especially should avoid the danger of creating too strong attachments between themselves and their children.

THE INTEGRATION OF PERSONALITY

The Concept of Integration. Integration is a state of an individual in which his various habits, perceptions, motives and emotions are fully co-ordinated, resulting in effective adjustment. The integrated person acts as a balanced whole. He comprehends the various aspects of the situations that he faces, and relates them to appropriate past experiences. The unintegrated personality reacts in a fragmentary and partial manner, ignoring significant cues that should aid him in adjustment, or else adjusting only a portion of his needs to his opportunities. It is interesting to note that this lack of unity and organization in the behavior of the maladjusted is prominently recognized in popular descriptions of these conditions. The maladjusted person is said to have "broken down" or to have "gone to pieces." When he recovers, he has "pulled himself together." It is pos-

sible that the psychological concept of integration has been influenced by these popular notions. Whatever its source, however, the principle of integration seems to be a sound and useful one if objectively treated.

Some examples of lack of integration, of various degrees, will serve to make the concept clearer. The most extreme disturbances of integration are seen in the delusional states of severely mentally disordered persons. We may find a patient in a mental hospital who informs us that he is a king, that he has millions of dollars and that thousands of soldiers are at his command. Yet he conforms to hospital routine, and carries out simple menial tasks without much complaint. He has an utter lack of integration between his beliefs and his perception of things as they are. Hysterical persons show a marked deficiency of integration. They are unable to unify the responses to such motives as fear and social approval, and find only one-sided satisfactions. Also, their physical symptoms may be regarded as disintegrations of bodily adjustment. They display an extreme tendency to "not let the right hand know what the left hand does." Individuals who worry show a deficiency of integration, in that they are unable to respond to their situations as a whole. They admit the fact that their worry is nonadjustive, but are unable to make a constructive response. Even in ordinary compensations, which are probably the mildest of behavior disorders, there is some lack of integration. The person who employs defense mechanisms does not have insight into the causes of his behavior, and does not comprehend that it hinders the full satisfaction of his motives rather than promotes it.

One of the clearest theoretical statements of the concept of integration is that of H. L. Hollingworth. He defines his concept of "scope" or "sagacity" in a manner that makes it almost synonymous with "integration" as it has been employed in the present text. Hollingworth says, "We have also indicated that another feature of mind of great importance is the capacity to synergize or combine in one effective adjustment, the instigative effects of many stimuli present in a given situation. This

openness to all the cues of the moment, reaction in terms of present context as well as in terms of past context, is... *sagacity*." And again, "But in individuals or circumstances of a certain type, the response may be overdetermined by the detail, without due regard to other features now occurring with it. The response is thus determined by past contexts rather than by present contexts. It is therefore likely to be bizarre, inutile, maladjusted, and hence neurotic. Prepotency of special cues or fragments of a situation may thus result in ineffective adjustment to that situation. Effective adjustment demands that all the present facts be allowed to constellate, to *determine jointly* the nature of the response. Individuals in whom this synergy or adequate co-operation of all the details of a situation does not effectively take place are lacking in a characteristic which we may for convenience call *scope* or *sagacity*." [2]

The unsagacious or unintegrated person adjusts poorly because he cannot effectively combine his motives, his past experiences and the necessities of the present situation. Ordinarily, a lack of integration precedes the onset of a maladjustment. It is a general characteristic of personalities subject to inadequate adjustments, and hence an important predisposing cause of disorders of conduct.

Experiences Leading to a Lack of Integration. Inadequate integration is a developmental defect. Like other predispositions of this type it may arise from a lack of desirable training in habits of unified action, or from unfortunate experiences that have a definitely harmful effect on the co-ordination of attitudes. Since the degree of an individual's integration cannot be measured with precision at the present time, exact knowledge of the growth of this aspect of personality is meager. From the evidence gathered by means of case studies, however, it is apparent that some of the factors harmful to integration have been identified. A list of these follows. The inventory is intended to be suggestive of some of the principal sources of this class of personality defects, but is by no means exhaustive.

[2] Hollingworth, H. L., *Abnormal Psychology*, pp. 200, 250. New York, The Ronald Press Company, 1930.

1. Lack of orderly living. Irregularity in habits of eating, sleeping, or dressing, in caring for his possessions and in respecting the rights of others, seems to lead to a lack of integration in a child. A firm enforcement of order and routine has been found to be among the best curative procedures for "nervous," "scatter-brained," unintegrated individuals.

2. Lack of proper guidance and constructive discipline. The child who runs wild does not develop adequate integrative control. He fails to form the habit of putting off the satisfaction of immediate and partial desires for the sake of greater and more remote ends. The case of Malcolm F. illustrates this point. He is an only child of rather erratic parents. In the second grade at eight years of age, he has not yet learned to read at a first-grade level. He interrupts persons who are talking to him and parries for information when asked questions. He will work only under the closest supervision. He is a notable liar, and tries to take credit for work that is not his own. Malcolm's home background offers a fairly clear explanation of these traits of personality. The mother refuses to take any responsibility for the boy. She seldom makes any request of him and never corrects him. Her attitude is that the boy's life is his own and that it is no concern of hers. At home he climbs over the furniture, talks and shouts most of the time and is conspicuously impolite. His reading disability at school is not due to low mental ability, for his intelligence quotient is well above normal, but to his inability to carry out a task requiring restraint and concentration. His difficulties illustrate the behavior of a child who has no self-control because no one else exerts a thoughtful control over him.

3. Too repressive discipline. At the opposite extreme to lack of control, excessively repressive discipline predisposes to maladjustment. The child who is compelled to obey demands which he cannot understand, or to do otherwise than seems desirable or sensible to him, is being trained in an inco-ordination of thought and action.

4. Vacillating and conflicting control. If the control of the child vacillates, being strict at times and negligent at others,

the child does not know what to expect, and develops no coherent standards of conduct. A similar effect is produced by conflicts between persons having control over the child. If the parents quarrel over discipline, or if there is a grandmother who will permit what the parents forbid, disintegrating consequences are very possible.

5. Pulling and hauling. When parents are in such a hurry that they do not give the child time to adjust to one situation before thrusting him into another, integration suffers. Charles B., a first grader of six, was troubled by this kind of treatment. He was an extremely nervous child who fidgeted and could not attend continuously to any task. His mother was a woman whose many social engagements kept her in a hurry. Charles was hauled out of bed in the morning and hurriedly dressed by his mother because she could not wait for him to do it himself. He was constantly being rushed and pulled beyond his ability to react, which resulted in the "nervous" symptoms. He was also excessively dependent, because of having things done for him which he could have done himself if given the necessary time. Too great haste in stopping a child's activities and unreasonably initiating new ones, lead to unintegrated personality.

6. Neurotic parents. The child whose parents are maladjusted has a poor start toward achieving integration. He is likely to learn their mechanisms of maladjustment, furnishing one of the many instances in which inadequate behaviors run in families by imitation and suggestion. Even if this does not occur, he will be subjected to inconsistent and irrational control by parents who cannot themselves be rational.

7. Quarreling and inharmonious home, and conflict of loyalties. One of the most disastrous circumstances for child integration is quarreling in the home which compels the child to take sides and to experience a conflict of loyalties. A number of different consequences, all disintegrating, may follow. Sometimes the child reacts with fear and becomes shy and seclusive. Sometimes he may respond with undue loudness and aggressiveness on his own part. Quarrels in the home always result in a

lack of confidence of the child in his parents, thereby weakening their guidance and preventing confession and seeking of advice. When strong conflicts of loyalty are evident, as in loving two parents who hate each other, habits of divided action are formed which may lead to a lack of integration in general.

8. The broken home, from which one parent has deserted, is statistically one of the most common factors in cases of juvenile maladjustment. This is not a simple condition, however. Broken homes are likely to be associated with neglect of discipline, inadequate control, conflict of loyalties, and also with excessive love transference made by the deserted parent. All of these factors are disintegrating. Many broken homes, of course, may avoid these errors, and are not harmful.

9. All conditions which tend toward repression, or toward an inhibition against giving confidences and receiving advice, make for defective personality integration. A person who represses cannot see his problems as wholes.

10. All emotional maldevelopments are harmful to integration. The emotional state is one of unco-ordinated activity and one which prevents the progress of constructive trial and error. Emotional difficulties are therefore inseparable from those relating to defective integration.

AN EXPERIMENTAL APPROACH TO THE PROBLEM OF INTEGRATION

Experimental Neurosis. Unfortunately, the integrative functions that human beings exercise in everyday life are not very susceptible to experimental study, which would yield more exact data concerning them. A series of experiments from the conditioned reflex laboratories have, however, contributed a very significant and suggestive point of view. As is often the case in research, these experiments were originally designed to attack other problems. The observations that are significant to the problem of integration were first discovered as a by-product or incidental finding. In brief, these experiments suggest that integration is a function of discriminative ability, and

that it is broken down by the imposition of too much discriminative strain on the individual.

The first observation of this type was made on a dog. Krestovnikova, a woman research worker in Pavlov's laboratory, was conducting an experiment on visual discrimination. The dog was conditioned to secrete saliva when a circle of light was thrown on a screen, by giving it the food stimulus simultaneously with the visual impression. Then, as is the usual procedure in discrimination experiments, the dog was trained *not* to salivate for an ellipse, by withholding the food when this form was presented.[3] The dog readily learned to salivate when the circle was shown, but not to respond to the ellipse, so long as these were markedly distinguishable. As a test of fineness of discrimination, a series of ellipses was then used which more and more nearly approached a circle. The dog succeeded in making a discriminative response between a circle and an ellipse whose axes were as seven to eight. When the experiment was pressed farther and an attempt was made to have the dog discriminate an ellipse whose axes were as eight to nine, which is scarcely different from a circle, a rather peculiar thing happened. Instead of either learning or not learning to make the discrimination demanded, the dog "*broke down.*" He salivated indiscriminately for either stimulus. More significantly, he now made salivary responses to anything even indirectly connected with the experiment, salivating at the sight of the experimenter or of the apparatus. When tested with the "easy" discriminations that he formerly made without difficulty, he was found to have lost them. He could no longer make even the clear discriminations between circles and ellipses that had caused no trouble in the early part of the experiment. The dog also showed a general disturbance of behavior that could be designated as emotional. He whined, barked, tore at the restraining harness and tried to escape from the apparatus. Henceforth he was useless as an experimental animal. This condition was designated as *experimental neurosis*.

[3] For a description of experiments in conditioned discrimination, see Chapter III, p. 67 f. The original sources of the experiments here described are in Pavlov (1928), Razran (1933), and Luria (1932).

A similar observation was made by Erofeeva, another Russian research worker. A conditioned reflex was formed to an electrical stimulus. In this experiment a "conflict" was set up between the conditioned food reflex and a natural defensive reflex in response to a painful stimulus. An attempt was thus made to attach two incompatible responses to the same stimulus. The result was the same as in the preceding observation. The dog showed rage, barked, and manifested generally disorganized behavior.

The phenomena of experimental neurosis may be summarized as follows. First, the animal becomes unable to discriminate, losing even the older more habitual differentiations that have been formed previously. Second, he shows an irrational spread of response, salivating for stimuli only incidentally connected with his training. Third, the animal gives evidence of tension and of emotional responses. This condition of artificial disintegration is brought about by too much strain on the discriminative functions, or by the closely related cause of the collision or "conflict" of antagonistic habits. The same characteristics are seen in persons who are neurotic, unintegrated and predisposed to maladjustments. They cannot discriminate between conflicting courses of action, and are thrown into emotional turmoil when they attempt to do so.

Experimental Breakdown in Human Subjects. A number of analogous experiments have been performed on children, chiefly in the laboratory of Krasnogorski. The one that most nearly resembles the studies of experimental neurosis in animals, both in method and results, is that of Panferov. A general behavior disturbance was set up in a six-year-old child by demanding an excessive auditory discrimination. The child was conditioned first for a motor response to a metronome beat of 144 beats per minute. Training in differential responses was carried out by the usual method, and the child had no trouble in discriminating between 144 beats as a positive stimulus and negative stimuli of 92 and then of 108 beats. He readily responded to the rhythm of the 144 beats, but inhibited response to the others. When the fineness of discrimination was increased to a difference

between 144 and 120, a differential response was achieved, but only with difficulty. General behavior began to be affected at this point, the child being described as "taciturn," "refuses to go to the laboratory," "walks and mounts apparatus slowly." Finally, the experimenter endeavored to set up a differential response between 144 beats and 132 beats, a very slight difference. The child was unable to differentiate these stimuli. Moreover, he now appeared to have lost the previously established differentiation between 144 and 120. His general behavior was even more affected. He is described as "rude, fights, is disobedient, excited" and finally "yawns, closes his eyes, falls asleep." In this experiment the same characteristics of experimental neurosis were produced as in the case of the dog, loss of easier discriminations and general emotional upset, both of which characterize a disturbance of integration. The tendency of the child to fall asleep may be explained in several ways. Pavlov interprets it as a very generalized spread of the inhibition set up, and supports this contention with much experimental evidence on animals and humans. It might also be regarded, in this case, as a sequel of emotional exhaustion, or as a means of defense against an unbearable situation. Sleep is not uncommonly used as a withdrawing mechanism to escape an adjustive difficulty. Probably all of these factors contribute to cause the sleepiness often reported in discrimination or inhibition experiments.

The experiment cited above has been verified by a number of similar studies. Siriatsky is said to have obtained the same result when attempting to have a child discriminate between two very close tactile stimuli. Shastin produced a general behavior disorder in a fifteen-year-old cretin by attempting to set up discriminatory responses to touch stimuli applied to the knee and the foot. The readiness with which breakdown was achieved in this case suggests a connection between integration and glandular disorder. Other experimenters have produced behavior disturbances of varying degrees by an excessive extention of the delay interval in the delayed conditioned reaction experiment. These may be ascribed to a disintegrating

effect of prolonged inhibition. No data are given as to the permanence of the experimental neuroses set up in child subjects. It may be surmised that, because of the abstract situations in which the breakdowns occurred, the effect on the child's adjustive behavior in his real experiences was not too severe.

Personal Adequacy as a Function of Discrimination and Inhibition. The studies of experimental neurosis strongly suggest that the poor integration and generally incoherent behavior of the maladjusted person may be due to *too much strain on the discriminative functions.* That an ability to discriminate between alternative courses of conduct is a prime characteristic of integration is very evident from the previous definitions and illustrations of the term, and in Hollingworth's concept of "sagacity." It is quite clear that the influences which the case study approach have distinguished as causes of poor integration put an excessive discriminative strain on the child. Lack of training in a problem-solving attitude and lack of desirable guidance and control retard the development of discriminative ability. The more serious conditions of conflict of loyalties, inconsistency of emotional conditioning, vacillating discipline and erratic control may all be described as actively injurious to a proper degree of discrimination in adjustment. The experiments in differentiated conditioned reactions are of great assistance in removing the mystery from the problem of integration and in reducing it to an objective basis.

It must be recognized, however, that these experiments are suggestive rather than conclusive. Much more research is needed, in order to define the conditions under which experimental breakdown may occur, and to clarify the relationship between this laboratory phenomenon and disturbances of personality that occur in everyday life. It seems probable that if limited laboratory experiments can have such a pronounced effect on general conduct, the same circumstances occurring in highly motivated and emotionally charged adjustment problems would be even more disastrous. The most promising field for research on the differences between adequate and inadequate personalities seems to lie in the investigation of the functions of discrimination and inhibition.

AGRICULTURAL

SUGGESTED READINGS

Detailed descriptions of the normal development of emotional responses and personality traits in childhood may be found in Jersild, *Child Psychology*; Morgan, *Child Psychology*; Hollingworth, *Mental Growth and Decline*; and in a number of other books on child and genetic psychology. Valuable specific studies are: Goodenough, *Anger in Young Children*, and Marston, *The Emotions of Young Children*.

Fisher and Hanna, *The Dissatisfied Worker*, chaps. 5–7, illustrates the origin of adjustive difficulties from maldevelopment. Sexual maldevelopments are described in Fisher, *Introduction to Abnormal Psychology*, chap. 11; and McDougall, *Outline of Abnormal Psychology*, chap. 19.

The significance of integration in mental hygiene is emphasized by Burnham, *The Normal Mind*, especially in chap. 2. Some recent experimental approaches to the study of personality are given in Luria, *The Nature of Human Conflicts*, and in Lewin, *A Dynamic Theory of Personality*.

CHAPTER XIV

PSYCHOANALYSIS

PSYCHOANALYSIS AND PSYCHOLOGY

THE recent years that have witnessed the development of the objective psychological approach to problems of behavior and personality have also seen the growth of an alternative method of explaining human nature designated by its originator as *psychoanalysis*. Although often confused, psychoanalysis and psychology are fundamentally different. Their common ground is that they seek to explain some of the same phenomena, but in methods of obtaining data, in basic concepts and in conclusions the two approaches diverge widely. In spite of these differences, it is important for the student of the objective psychology of adjustment to know something of psychoanalysis. Historically, psychoanalysis was slightly the earlier development and was instrumental in spurring psychology to the realization of the problems now designated as those of emotion, personality and adjustment. Another reason for presenting an account of psychoanalysis is to forewarn the student of its existence. If it were ignored here the reader, upon discovering it later in other sources, might feel that an important point of view had been withheld maliciously.

Difficulties in Describing Psychoanalysis. It is exceedingly difficult to make a brief presentation of the field of psychoanalysis without superficiality or unfairness. The subject is an intricate and fully developed one with a literature almost as extensive as that of psychology itself, and is therefore hard to condense in a short chapter. Another difficulty lies in the variations of psychoanalytic theory that exist even among orthodox adherents of the school. Freud, Ferenczi, Flügel and Ernest Jones, to name only a few of the outstanding contributors, disagree somewhat among themselves and the outsider is at a loss to know which is most authoritative. The temporal

changes in psychoanalysis are also confusing, in that some of Freud's later writings contradict his earlier pronouncements. One of the chief defects of popular presentations of psychoanalysis is, in fact, the tendency to describe the earlier theories of the movement, now rejected by its chief persons. The term "psychoanalysis" is variously applied to the theory, to the method of investigation and to the technique of treatment of the psychoneuroses advocated and employed by psychoanalysts. Some confusion may result from a failure to distinguish these aspects. In the account that follows an attempt will be made to overcome these difficulties, to the best of the writer's knowledge, by presenting *Freud's* viewpoint rather than that of others, by describing *theory* first and practice afterward and by giving the *most recent* rather than the earlier opinions. For the sake of clarity the psychoanalytic theory will be presented in the next two principal sections in a positive manner and without criticism, but this procedure does not imply our entire agreement with the concepts described. Each sentence must be understood as accompanied by the prefix "according to psychoanalysis...."

FUNDAMENTAL PSYCHOANALYTIC CONCEPTS

Energy and Libido. Perhaps the most fundamental psychoanalytic concept is that every individual has a store of vital energy, which is called *libido.* The strength of this vital energy, its nature and the channels into which it flows are the prime factors in determining personality and in distinguishing between normality and neurosis. The libido is an entirely mental or psychic energy, not synonymous with appetite, drive, nutrition or any other physical or physiological entity. This vital energy has one source and nature, it is *sexual.* The libido is "the force through which ... the sexual instinct expresses itself" (Freud, 1920). The term "sexual" is employed both in a broader and in a more narrow sense than in popular speech. It includes all kinds of pleasure-seeking activities and does not apply alone to the genital organs or to the reproductive process.

Freud says that it includes all that is ordinarily understood by the term "love," including self-love, love of parents and love of mankind. In spite of this broad meaning, libido is also narrowly sexual, its aim being sexual union. The more diffuse manifestations are expressions of the narrowly sexual instinctive tendency.

The libidinal vital energy is present from birth and is as important in determining the behavior of infants and children as of adults. In infants, however, it is at first diffusely distributed as will be described later. The libido is dynamic and is constantly flowing and moving. It may flow inward to the self (narcism) or may be directed outward to other individuals or things (object-love). It may be directed to unreal phantasies (introversion). The libido may adhere to infantile love-objects (fixation) or may flow backward to them (regression). It may become restrained or dammed up (repression) or may be directed into altruistic and social channels (sublimation).[1]

In Freud's earlier writings he considered the self-preservative or Ego-impulses as opposed to the libido. Later he came to believe that the self-preservative instincts arose from self-love and were therefore essentially libidinal in nature. Freud has more recently grouped the healthily directed libido and the self-preservation urge together as "Eros" or the life instinct. In opposition to the libido, there is now recognized the *death or destruction* instinct which consists of self-punishing or self-destroying tendencies when directed inward and in cruel and aggressive impulses when directed outward.

Conscious, Preconscious, and Unconscious. The realm of mental life is divided into three parts, the conscious, the preconscious and the unconscious. The concept of the *conscious* mind would have needed little explanation to students of academic psychology of fifteen or twenty years ago. It consists of that mental content of which the individual is aware at the time. Obviously, it is small in comparison to the other divisions of mind and its material is constantly shifting and changing. Some of the conscious comes from the external world,

[1] See the "Brief Glossary of Psychoanalytic Terms" at the end of this chapter.

much of it arises from the lower levels of mind. The *preconscious* is that part of mind the contents of which can easily be brought into consciousness by the association of ideas. It is the seat of ordinary memory and is on the whole more like the conscious than like the unconscious. Of course, preconscious ideas vary in the ease with which they can be made conscious, this being due in part to normal associative processes but also to a certain amount of censorship exercised by the conscious to keep certain preconscious ideas out.

The *unconscious* is the best-known concept in the Freudian theory. It may be thought of as Freud's answer to the inadequacy of the intellectualist consciousness-psychology of the immediately preceding period. The unconscious is the largest part of mind, and is actively and effectively engaged in unconscious mental processes which, while unknown to the individual, have great influence on his thinking and actions. The content of the unconscious is not verbalized and logically arranged like that of the conscious. In it antagonistic impulses can exist together without conflict. The unconscious is spoken of as unintegrated, infantile and primitive. Emotion, desire and instinct predominate in the unconscious, rather than ideas. The unconscious content comes from two sources, that which has been *repressed* into it from the conscious, and that which never was conscious. The latter aspect, which Jung emphasizes more than Freud, is the racial unconscious consisting of remnants of the mind of primitive man.

Id, Ego and Super-Ego. In Freud's earlier writings, the Ego was assumed to be conscious and was contrasted with the unconscious. Later, Freud was prompted to add more characters to the drama of mind by a conviction that a part of the Ego was unconscious. This led to the postulation of the Id (das Es, the "it"), the Ego (Ich or "I") and the Super-Ego. The topographic relationships of these parts of personality may be seen in Figure 24.

The *Id* is the entirely unconscious, striving aspect of personality. It is the original seat of libido and the source of all of the instinct energy of the individual. The Id, in keeping

with its primitive character, is entirely guided by the "pleasure principle," that is, by the seeking of gratification and the avoidance of pain. It has no contact with reality except through the mediation of the Ego. The Id is illogical and unmoral, and may be considered as roughly equivalent to the primitive and animal nature of man.

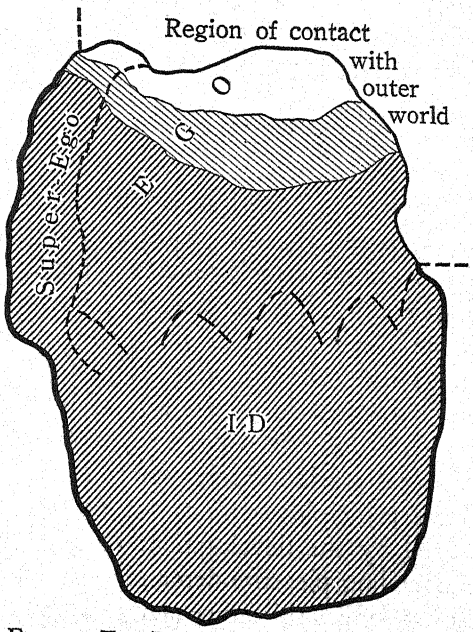

FIG. 24. THE PSYCHOANALYTIC CONCEPTION OF THE STRUCTURE OF PERSONALITY

The heavily shaded portion is the Unconscious; the lightly shaded portion is the Preconscious and the unshaded portion the Conscious. (From Healy, Bronner and Bowers, *The Structure and Meaning of Psychoanalysis*, by permission of Alfred A. Knopf, publisher.)

The *Ego* is partly conscious and partly unconscious. In infancy the Ego is small and weak, but gradually grows through contact with reality, and by the assumption, through the mechanism of *identification*, of the characteristics of the infantile love objects, notably of the parents. The normal adult Ego is governed chiefly by the "reality principle" and is rational and perceptual. In its lower regions the Ego is in close contact with the Id and acts with it in several ways. The Ego is the source of the repression of urges that are pushed back into the Id and in general seeks to control the primitive instincts of the latter. At the same time, the Ego grants satisfactions to the Id when they are judged to be harmless.

A further complication of the structure of personality is the *Super-Ego*, which consists partly of inherited moralities and taboos and partly of the moral notions acquired by the child from its parents. The principal function of the Super-Ego is

criticism. It is largely unconscious and is more aware of the Id's unmoral impulses than is the Ego. Hence, the Super-Ego strives to compel the Ego to repress the tendencies of the Id. As it is sometimes expressed, the Super-Ego fights with the Id, the Ego being the battleground. It is obvious that the Super-Ego corresponds to the notion of "conscience."

Dualisms and Conflicts. The psychoanalytic theory abounds in dualisms or "polarities," that is, in pairs of entities of antagonistic nature. Some of these have already been met as Eros and the "death instinct," conscious and unconscious, and the Ego and Id. In addition there are the opposites of masculine-feminine and love-hate which need no explanation. An important pair is the *pleasure principle* and the *reality principle.* That which is done for immediate pleasure or to avoid pain belongs under the first class. This method of determining activity is characteristic of the Id, of infants and neurotics. That which is done for expediency or because it is demanded by the external world pertains to the reality principle. In infancy these principles *conflict,* but the combat is normally compromised by the development of a strong Ego that succeeds in reconciling pleasure-demands with reality. Neurotics are unable to effect this inner peace, which, as will be seen later, is an important factor in understanding their condition.

Stages of Personality Development. The core of the psychoanalytic theory is its conception of the development of personality. This development is divided into three principal stages, the infantile period which includes the years up to five or six, the latent period from then until puberty, and the adolescent stage which lasts until eighteen or twenty years of age. The greatest interest and importance is attached to the infantile stage. Development in this early period is characterized by two not unrelated trends, that of the localization of the libido or of the chief zone of pleasurable sensation, and that of the finding of objects for the attachment of the libido. Ego development also goes on simultaneously and is closely related to libido development. The development of libidinal localization may be described first. At birth the infant's libido is dif-

fusely distributed, but then in a brief period of time it comes to be localized in three different body regions in turn. First is the *oral-erotic* stage in which the libidinal satisfactions are obtained chiefly from the mouth, at first in nursing and thumb-sucking, later in biting and chewing. Destructive impulses of infants are ascribed to this later oral ("oral-sadistic") phase. Then follows the *anal-erotic* stage in which the eliminative function and organ become the center of satisfaction. In the early anal phase expulsion is pleasurable, in the later, retention is the mode of pleasure-finding. The anal stage is displaced by the early *genital* stage, when the pleasure-giving possibilities of the sex organs are discovered and utilized. This is the final state of libido localization, although the genital localization is renewed and intensified at puberty. Many anomalous conditions among adults are ascribed to fixation at or regression to one or another of the earlier infantile stages. For example, cruelty is due to regression to the late oral stage of biting-pleasure, avarice and obstinacy to the late anal phase of pleasure in retention. The "oral character" and the "anal character" are thus distinguished in adults. In the normal course of development the oral-libido is thwarted by weaning and the anal-libido by bowel-training. If successfully accomplished these events give the child a better comprehension of the demands of reality and hence strengthen the Ego.

The infantile progress in object-finding passes through three stages. The first stage is termed *auto-erotic*, by which is meant not self-love but pure bodily sensation. The libido is attached to no object, but is gratified only by purely organic pleasures. As the Ego forms, the libido becomes attached to it, leading to the second stage of true self-love or *narcism*, named after the legend of Narcissus, who fell in love with his own reflection in the water. This primary narcism strengthens the Ego with some of the Id's energy and persists throughout life, being desirable if not excessive in degree. The egocentric character results from fixation at or regression to the narcistic level. At adolescence there is a second wave of narcism which is a normal event at that time. The third stage of libidinal attachment is

the *object-choice*, the first adherence of the libido to an external love-object being, naturally enough, directed to the child's parents. This begins at the same time as the genital stage of libido localization. Parent-attachment introduces the problem of the Oedipus complex.

The Oedipus and Castration Complexes. The course of parental attachment differs for the boy and for the girl, hence the course of development for each must be traced separately. The libidinal attachment of the *boy* is first directed toward his mother, having already a beginning in the earlier non-genital attachment formed from her relationship to his oral needs. With the development of the genital phase, this object-choice becomes more directly sexual and the *Oedipus complex* is formed. Named after the myth of the Theban king who slew his father and married his mother without knowledge of what he was doing, the Oedipus complex represents the boy's unconscious desire for incestuous sexual union with his mother. The unconscious nature of this wish must be emphasized. The child does not become aware of the direct sexual nature of the desire at all. It is manifested only by desire for caresses, for attention, in wanting to sleep with the mother and in similar attenuated expressions. The earlier psychoanalytic view was that this complex concerned the person of the parent; later it was recognized as carried out almost entirely in unconscious phantasy, a mother-image (or *imago*) in the unconscious being the love-object. The Oedipus complex is not regarded as originating from the mother's affection for the child. It is innate in the boy, a heritage of the racial unconscious. As the sexual love for the mother grows, the father is recognized as a rival for her favors, and hostile wishes, including those of death and injury, are formed against him.

From this father-hostility comes the second great complex of the infantile period. The boy unconsciously fears that his father will retaliate by physically injuring him, particularly by depriving him of his newly discovered and highly prized genitals. This is the *castration complex*. This complex was earlier ascribed to actual parental threats to cut off the genitals when the child

was discovered playing with them and to the discovery that girls apparently lack external genitals and were therefore believed by the boy to be persons on whom the threat had been carried out. Since Freud later believed that he had found evidences of the castration complex in persons who had not had these experiences, the idea was ascribed to an inherited idea, preserved from prehistoric times. The castration complex "explodes" the Oedipus complex. Because of its threat the boy gives up his incestuous desire for his mother. The solution of the Oedipus involves the *sublimation* of the feelings toward the mother into tender affection, and *identification* with the father so that his achievements come to be regarded as the child's own. The Super-Ego has its origin in the solution of the Oedipus, the intolerant conscience being formed in the process of the renunciation of the infantile sexual aims.

The parental complex is further complicated by *bisexuality*. Every child has some of the psychic characteristics of the opposite sex. An *inverted Oedipus complex* is therefore also formed, the boy homosexually loving his father and hating his mother. This is normal and with the direct complex constitutes the "complete Oedipus." It is solved by identification and sublimation as is the positive Oedipus complex. If because of psychosexual constitution or circumstantial factors the inverted Oedipus is too strong, a homosexual predisposition will result.

The personality development of the *girl* presents more difficulties than that of the boy. The primary attachment to the mother resulting from nursing must be overcome at the beginning, and the solution at the end is not so clearly defined. In the girl, the castration complex *precedes* the Oedipus complex. The girl discovers what she takes to be her genital inferiority to boys. This lack or deprivation she blames on her mother and hence adopts a hostile attitude toward her. This is the female castration complex or *masculinity complex*. Renouncing mother-love because of this hostility, the girl now turns to father-love and finds in him a compensation for her annoying lack of maleness. This is the girl's Oedipus complex, which often takes

the form of the unconscious desire to bear the father a child.[2] The dissolution of the Oedipus complex is slower in the girl than in the boy, since no catastrophic fear brings it to a close. It is eventually solved by identification with the mother and sublimated feelings toward the father. As in boys, the girl's development involves bisexuality, and an inverted Oedipus is also formed. A recurrence of the castration complex may take place at puberty when the first menstruation is attended with fear and shame.

PSYCHOANALYTIC CONCEPTS OF THE NEUROSES

Normal and Abnormal Development. The course of personality development so far described is deemed to be the normal one. All persons have infantile sexual complexes, but in normal development these are solved to a sufficient degree, principally by sublimation and identification. Abnormal development leading to symptoms of varying degrees of severity and to neuroses results when complexes are inadequately solved. If sublimation is inadequate, a *fixation* occurs, which means that the libido adheres or is fixed to the image of the unrenounced infantile love-object. This causes two related evils. First, the fixed libido is not available for dealing with reality, hence the individual with infantile fixations has less energy with which to combat the difficulties of his existence and is more susceptible to emotional shocks and thwartings. Second, a further store of energy has to be used up in repressing the incestuous desires and keeping them from reaching consciousness, which further exhausts his dynamic potentialities. In brief, the psychoanalytic theory holds that the individual's capacity for accomplishment depends on his having an adequate supply of energy available. If too much libido is fixated in infantile wishes, he will be weak and subject to maladjustment and neuroses. Individual differences in the degree of fixation depend upon variations of the constitutional "adhesiveness" or lack of plasticity

[2] This complex was at one time called the "Electra complex," after a legend of a girl who killed her mother and loved her father, but this term is now seldom employed.

of the libido, and also upon differences in childhood experiences.

Since all persons cherish remnants of infantile complexes in some degree, all adult behavior shows some peculiarities that are ascribable to fixation. In less numerous cases behavior is so disturbed as to constitute a psychoneurosis. Healy, Bronner and Bowers (1930) enumerate five factors that determine the issue between normality and neurosis. These are: (1) Whether the Id is able to disguise the repressed impulses sufficiently so that they are not recognized by the Ego or Super-Ego. (2) Whether an adequate amount of libido is left unfixed for the use of the Ego in facing reality. (3) Whether reality is easy or hard to deal with, that is, whether the adult encounters serious difficulties and frustrations or not. (4) Whether the Ego is strong or itself infantile and preoccupied with childhood conflicts. (5) Whether the Super-Ego is easy-going or too severe with the expressions of the infantile wishes. If an individual's development is favorable in relation to these matters, he stays normal; if it is unfavorable he develops the symptoms of maladjustment or neurosis.

Dynamisms. In both normal and neurotic individuals, devices of thinking and conduct termed *dynamisms* are employed to compromise between the content of the Id, both innate and repressed, on the one hand, and the demands of reality on the other. Dynamisms are therefore the means by which the Ego deals with its three adversaries — the Id and Super-Ego within and the external world without. Some dynamisms serve to provide outlets for the wishes of the Id, others are "defenses" against the expression of the repressed desires. Some seventeen or eighteen types of dynamisms have been described, many of which overlap. A few of the most important will be enumerated here.

Of the dynamisms of defense, *repression* itself is possibly the most fundamental. The concept of repression arose from the discovery of "resistances" during the process of analysis which are shown in the patient's reluctance or inability to tell of certain wishes and experiences of the past. Repression is a func-

tion of the Super-Ego, which prevents painful or rejected desires and ideas from appearing in consciousness. *Reversal-formation* is another defensive dynamism that operates to negate repressed wishes by the expression of the opposite sentiment. Thus a repressed sexual desire results in a horror of sex as in the form of prudery. In the opposite aspect, a hostile wish toward a parent, the residual of unsolved Oedipus or castration complexes, may show itself by an excessive concern for the parent's welfare. The dynamism of *rationalization* serves to protect the Ego against the necessity of acknowledging the real desires underlying behavior, by substituting socially acceptable reasons for acts really motivated by repressed love or hostility. *Projection* operates by ascribing to the external world the rejected urges of the Id. It is usually illustrated, in the extreme of abnormality, by delusions of persecution in which the inner destructive impulses of the individual are projected to those about him, causing the patient to believe that others are seeking to harm or destroy him.

The most normal of the fulfillment dynamisms is *sublimation*. By this process the libidinal urges are transformed into interests and activities described as "aim-inhibited," in that their object is no longer sexual. The origins of vocational interests, hobbies, civic activities and religion are traced to sublimation. Although sublimated activities are in many instances remote from the original urges, they show in other cases their original sexual derivation. *Identification*, already encountered several times, is another useful dynamism, the individual securing outlets by identifying himself with the persons and achievements of others, particularly of his parent of the same sex.

Of the less desirable dynamisms *regression* is perhaps the most serious. Regression is the retreat of the libido to infantile types of satisfaction. Regression to the oral and anal phases of libidinal localization has been noted as characteristic of certain forms of disorder. Retreat to infantile love-objects is another form of regression. Regressive tendencies are brought about by the weakness of the Ego in coping with new developments of reality. This dynamism results in a renewal of infantile con-

flicts, bringing about the formation of further defenses usually of a neurotic nature.

Repressed urges find easily available outlets in *phantasy*, the wishful character of daydreaming being greatly emphasized by the psychoanalysts. Much distortion occurs in phantasy and wish-fulfillments of a non-sexual nature are often disguises for phantasied attainments of infantile sexual desires. *Unconscious phantasy* is a further application of the same dynamism, the imagined satisfactions occurring entirely in the unconscious without ever coming up to awareness. The hypothesis of unconscious phantasy was made by Freud early in his career. His women patients with surprising frequency recalled a childhood seduction by their fathers. Upon ascertaining that these seductions were in many instances not true in fact, Freud ascribed them to a childhood unconscious phantasy of seduction based on the Oedipus complex. This was unearthed in the analysis as an actual occurrence because the child was unable to distinguish effectively between fact and phantasy.

The dynamism of *conversion* denotes the physical expression either of repressed urges or of defenses against them. This is the basis of "conversion hysteria" which is explained as the physical solution of a mental conflict. The desires or defenses are "converted into" the physical symptom which may be pains, anaesthesias, paralyses or some other form of sensory or motor impairment. The hysteria is characterized by an excessive sex desire and a strong defense against it. The hysterical symptoms are sexual substitutes, often involving regression especially when the throat (oral region) and bowels (anal region) are involved.

A dynamism of wide application is that of *displacement*, which means the transfer of emotional energy from one idea to another. Considerable use is made of the concept of displacement in understanding dreams and in the interpretation of all sorts of symbolic behavior. Phobias are explained as examples of the operation of this dynamism. If a person suffers from an irrational fear of a harmless object, such as a fear of enclosed places, this is because the feared object symbolizes or repre-

sents, by displacement, some deeper fear. The displacement allows the expression of the emotion while protecting the individual from the necessity of acknowledging the strongly repressed tendency. In the earlier period of psychoanalysis, the fear was regarded as a "transformed" love urge, the repressed libido turning itself into fear. More recently (Freud, 1933), the deep fear resulting in phobias has been assigned to the threats of the external world, especially to the castration complex. It is thus deprivation that the individual fundamentally fears rather than his own inner desires.

Dreams. The theory of dreams has occupied a central position in psychoanalysis since Freud's first book on the subject was published in 1900. Dreams involve a dynamism peculiar to themselves as well as a number of the other dynamisms, and therefore constitute a means of expression for the repressed content of the unconscious. But dreams are much more than just another dynamism to the psychoanalysts, for they have provided the chief means for understanding how the unconscious operates. The infantile and illogical character of the unconscious and its preoccupation with direct gratification were first noted in the study of dreams.

According to psychoanalysis all dreams are meaningful. Not only the dream as a whole but every little element in it has significance that may be interpreted in relation to the dreamer's personality and complexes. The meaning of a dream is not apparent in the obvious and literal events reported by the dreamer, which are termed the *manifest content* of the dream. This manifest content, consisting chiefly of visual imagery, hides the *latent content* in which the real meaning will be discovered. The latent content consists of the desires and anxieties of the unconscious, which are distorted before being expressed in the actual dream experience. Unconscious complexes strive to make their way upward into consciousness, but are prevented from doing so during waking hours by the vigilance of the Ego. In sleep the Ego relaxes somewhat and allows the content of the unconscious to appear. The sleep of the Ego is not complete, however, for there remains considerable resistance to the un-

conscious wishes in the form of the *dream-censor*. This censorship compels the Id to disguise the dream to hide its true significance from the Ego. If the Id impulses appear too strongly or too thinly disguised the Ego shows great anxiety and may awake as a protective measure, this sequence constituting the "nightmare." The labor that the Id normally performs in turning its urges into the manifest or apparent content of the dream is the dynamism of *dream-work*.

Fundamentally, dreams are wish-fulfillment devices, but they draw their manifest content from many sources. Part of the dream material comes from the preconscious, repeating or extending experiences of waking life. Other content arises through displacement, one idea assuming the emotional value that properly belongs to another. A special form of displacement is symbolization, which refers to the representation of an idea by means of some sign or substitute. Some symbols appearing in dreams arise through the individual experiences of the dreamer, but others are consistent symbols which always have the same significance for all persons. Among the fixed symbols asserted by Freud are included the following: anything long and pointed as a sword, a whip or a tree signifies the male; rooms, receptacles and bags are symbols of the female; going up or down a stairway indicates the sex act; coming out of the water is a symbol of birth. These are only a few samples of fixed symbols, there being many others. Many prominent psychoanalysts disagree with Freud on the matter of symbolism, holding that all symbols are the result of the individual experiences of the dreamer.

Neurotic Symptoms. According to psychoanalysis, neurotic symptoms are substitutes for the gratification of repressed urges. They are compromises between the demands of the Id and the repressive tendency of the Ego. Every symptom represents the fulfillment of some desire that cannot be gained in reality, this being especially clearly seen in hysteria, in phobias and in compulsions. The Ego accepts the symptom because it is less shocking than the direct gratification of the wish would be and because it lessens the labor of repression. A compulsion,

such as one to count steps for example, represents the attainment of a repressed aim and is therefore of value. Anxiety neuroses originate from the castration complex, being the fear of a weak and infantile Ego of retaliation from the external world because of the persistence of childish sexual fixations. It is noted that anxiety neuroses are more common among men, the castration fear being characteristic of the male sex. Hysteria is more prevalent among women.

A prominent trait of neurotics is that of *ambivalence* of emotion, love and hate being directed toward the same person. This is a usual characteristic of children in the stage of the Oedipus complex, and is normally outgrown in the solution of this early difficulty. That neurotics continue to show ambivalence indicates that their infantile complexes have not been solved, a fact already noted in explaining predispositions toward neurotic conditions. The conflict of love and hate constitutes one of the greatest problems of the neurotic and his weak Ego attempts to solve it by the inadequate device of repressing one or the other of these tendencies, thus paving the way to symptom formation.

The Aims of Therapy. The psychoanalytic method of treatment is based on the theory that the neurotic suffers from a weakness of internal energy that prevents him from using the superior methods of dealing with the Id. This lack of strength is due to the fixation of the libido on infantile love-objects and to the concern of the Ego with infantile anxieties. The aims of treatment are therefore to free the libido from its fixations and to strengthen the Ego, thus making the patient capable of dealing with his life problems. The curative procedures of psychoanalysis are based on two concepts, resistance and transference. *Resistance* is shown in the unwillingness and inability of the patient to disclose his real desires and complexes. This phenomenon is, of course, due to repression. The individual is quite unaware of the fact that the bases of his difficulties lie in infantile attachments and fears, and so is unable to relate them to the analyst. The analytic techniques overcome resistances and make the patient conscious of his basic conflicts. When

the infantile difficulties are brought into consciousness, the full force of the adult Ego can be brought to bear upon them, and a favorable solution can then be secured. The Oedipus complex, unsolved in childhood and since then inaccessible in the unconscious, is brought out into the light and solved by the now mature ability of the patient.

The concept of *transference* is even more fundamental in psychoanalysis. Early in his practice Freud noted a marked emotional attachment to the analyst on the part of the patient. The person being treated fell in love with his physician! This was not personal love, Freud concluded, but a transference to the analyst of the repressed love of the patient for the parent of the opposite sex. Because of his authoritative position and because he opens the repressed content of the unconscious, the physician becomes a parent-substitute. Transference is encouraged, and when it is completed, the patient is enabled to *re-create* the attitudes of early infancy, in his relation to the analyst. Patient and physician therefore re-enact the "family romance" of the early years. "Negative" transference also occurs, in which the patient for a time is indifferent to the analyst or even hates him. This is interpreted as a manifestation of the destructive aspect of an ambivalent attitude toward the parent, and is utilized in the reinstatement of the infantile attitudes. If transference were allowed to continue, the patient would cling to the analyst as he had previously clung to the parent-imago, which would be equally undesirable. The transference must therefore be dissolved, which is effected chiefly by explaining it to the patient. When the patient understands that he loved the analyst not as a person but as a surrogate for a parental fixation, the transference will end. In terms of psychoanalytical dynamics, the libido is transferred from the parent-imago to the analyst, who then gives it back to the patient. The libido so transferred cannot return to its infantile love-objects and so is at the disposal of the Ego for dealing with reality. This constitutes the cure of the neurotic condition.

Psychoanalytic Techniques. Psychoanalysis employs several

special techniques for discovering the content of the unconscious which are found useful both for overcoming resistance and for promoting transference. The two principal methods used are those of *free association* and *dream analysis*. These procedures are carried out in combination rather than separately and can only be considered together. The free association method is employed by having the patient lie down and relax, and then relate everything that comes to his mind. The relaxation and the reclining posture tend to minimize the influence of repression through their similarity to the state of sleep. Starting with some idea connected with his difficulties, the patient is made to tell everything that he thinks of, no matter how painful it may be or, on the other hand, how trivial or apparently irrelevant. Psychoanalysts are strict in enforcing the "conditions of free association." Everything must be told, everything is really relevant and meaningful. The associations themselves do not constitute the content of the unconscious, being only disguised expressions of the repressed urges. The analyst himself relaxes and lets his imagination play freely on the associations of the patient. Through his training in psychoanalysis, the physician penetrates the disguises and recognizes repressed complexes that are unintelligible to the patient himself. When the patient hesitates in the association process or when he protests that the ideas brought up are either too private or too trivial to tell, the presence of resistance and repression is indicated. As transference to the analyst progresses the resistances are broken down and the patient tells the analyst everything.

The dreams of the patient are interpreted in two ways. In some cases the dream content consists of fixed symbols immediately recognizable by the analyst. More frequently dreams serve as a point of departure for the free association technique. The patient gives an account of his associations to the dream as a whole and to all of its details. The dream and its associations are not interpreted literally, for they constitute only manifest or distorted content. The latent content, discoverable only by the combination of the analyst's knowledge and the patient's associations, is the real meaning sought. In the later stages of

the analysis, the physician *interprets* the associations and dreams to the patient, according to the psychoanalytic theory. This process of interpretation plays a large part in the treatment, and may be considered as a third technique of therapy. The object of interpretation is to break down resistances by convincing the patient of their origin in the infantile complexes. Patients are well on the road to recovery when they have assimilated the notion of the childhood causes of their troubles. In using all of the psychoanalytic techniques, the analyst does not guide or instruct the patient to change his traits of behavior. Dependence is placed on freeing the libido and strengthening the Ego, after which the patient can solve his problems unaided.

VARIANTS OF PSYCHOANALYSIS

A theory as unique, as challenging and as dogmatic as that of Freud inevitably called forth a number of variants. A large number of writers have adopted some of the psychoanalytic structures, rejected others and added new notions of their own. Usually these dissenters have used the concepts of the unconscious, complexes, repression and some of the dynamisms. Typically they have denied or modified the theories of sexuality, of libido and of the scheme of infantile personality development, which are essential to the truly Freudian approach. The variant theories are not genuine psychoanalysis, nor are they objective psychology, but they have made a few stimulating contributions to psychological thought. Typical of the minor semi-psychoanalytic varieties of theory are those of Bernard Hart (1916) and W. H. R. Rivers (1920), both British psychiatrists.

Outstanding among Freud's rivals are Alfred Adler of Vienna and Carl G. Jung of Zurich. Both of these men were associated with Freud in the early period of psychoanalysis. By 1912 both had elaborated their own systems independently. The influence of Adler and Jung has been wide and each has a large group of followers. The importance of these two men calls for a brief

sketch of their theories, although a really adequate presentation is impossible in a limited space.

"*Individual Psychology.*" Alfred Adler's school of interpretation has assumed the title "individual psychology," as the study of the individual in relation to his environment. Although it grew out of psychoanalysis, Adler's theory is diametrically opposed to Freud's on many important points and has been described by many writers as an antithesis of psychoanalysis rather than a variant of it. According to Adler, the principal force of life is a striving for superiority or self-assertion. In normal individuals this is adjusted to reality and integrated with social drives, thus leading to reasonable satisfaction through achievement. In childhood the urge to superiority is thwarted in many directions because of the child's weakness and helplessness and the omnipotence of his parents. This situation may be aggravated by the presence of actual physical defects, by imagined defects, by excessive parental severity or by other factors. In such circumstances, the individual acquires an unconscious *inferiority complex*. The child's place in the family is stressed as contributing to the formation of this feeling. The eldest child is likely to show it least, while the second child, being always behind in the race, is more strongly impressed with inferiority. The pampered child acquires feelings of inferiority when the spoiling ceases or when he makes contact with other persons than his parents and gets no special consideration. Individuals tend to express the striving for supremacy and the contempt for inferiority in symbolic terms. The commonest symbol is masculine-feminine, masculine standing for strong, courageous and "up," feminine signifying weak, incapable and "down." This type of thinking gives rise to the *masculine protest*, a desire to "be a man" characteristic of neurotics of both sexes. According to Adler, sex conflicts are only secondary manifestations of the fundamental drive to superiority.

The inferiority complex gives rise to *overcompensation*. Organs that are not strong, Adler believes, tend to correct their defect by an excessive activity of some kind. Psychic compensa-

tion operates to conceal or to overcome inferiority complexes. So long as an individual's compensations are not antisocial, he is normal; when they become aggressive "tricks" for subduing others they constitute a neurosis. Another difference between normals and neurotics is in *guiding fictions* or imagined goals. The normal individual is oriented by reality and does not set up impossible goals of attainment. The neurotic pays less attention to reality, being engrossed in his fictions that urge him to impossible superiority. Neurotic symptoms are all regarded as compensations. The hysteric uses his illness or incapacity to subjugate others, to compel their attention and service. Phantasy is an imaginative attainment of the guiding fiction.

On two more important points of theory, Adler differs from Freud. Adler insists on the unity of personality, that both the conscious and the unconscious are directed toward the same goal, instead of being engaged in internal conflict as Freud would have it. This has important implications for the technique of treatment. Adler finds the origin of neurotic symptoms in the *present conflicts* that the individual is having with the world in the attainment of his goals, rather than in repressed infantile conflicts.

Adler's method of treatment uses none of the psychoanalytic methods, since according to his theory the conscious and the unconscious are harmonious. Resistance is interpreted as an attempt of the patient to get the best of the physician, asserting superiority in this manner. The method of treatment is educative. Fictional goals must be broken down and replaced by aims capable of achievement. This is accomplished by discovering the patient's fiction and exposing it to him and by persuading him to relinquish this egocentric goal. When the patient has been retrained to serve social purposes instead of aspiring to hopeless individual ones, the cure is effected.

"*Analytical Psychology.*" Jung's school of "analytical psychology" differs much less from that of Freud. To the external observer, their quarrel seems to be personal rather than based on profound differences of theory. Both were strong men who could not tolerate a superior and hence they parted.

In his writings Jung continues to make many depreciatory remarks about Freud, and the latter has replied in kind. Before separating from Freud, Jung had made important original contributions to psychoanalysis. He devised the word-association method, a variety of free association in which the patient responds to a series of words said by the analyst by giving the first idea that comes to his mind following each stimulus. Jung suggested the term "complex" which was readily accepted by Freud. Even after Jung's departure from the orthodox fold, Freud has adopted with considerable delay and some modification some of the former's new conceptions.

Jung differs sharply from Freud concerning the nature of libido. Jung's concept of libido is of a general life urge from which springs all activity and all striving. It is in part sexual and in part moral and antisexual. The unconscious is not entirely base and animal, but contains within itself a moral or religious principle. It was on this issue that Freud and Jung first quarreled, but Freud later accepted it in part in the hypothesis of the unconscious Super-Ego. Jung described the unconscious as consisting of two principal parts, the *individual unconscious* of repressed personal experiences and the *collective unconscious* which consists of inherited patterns of neural structure predisposing the person toward archaic ways of thinking, like those of primitive peoples. The content of dreams and phantasies consists of "primordal images" from this collective unconscious, rather than being the expressions of personal wishes. The concept of the racial unconscious (regarded as wholly impossible and ridiculous by objective psychologists) has also been given some acceptance by Freud.

Jung believes that the conscious expresses itself in two different ways. One method is by emotion, action and participation, the other by contemplation, thought and phantasy. The dominance of one or the other of these methods of operation gave rise to his doctrine of personality types. The concepts of *extravert* and *introvert* are regarded by Jung as designating inborn personality types. This classification is probably his best-known and most popular original contribution. In Chapter XI

Jung's theories of personality types have already been described.

Like Adler, Jung regards behavior difficulties as arising from the present conflicts of the individual rather than from the relics of infantile fixations. He sees the neurotic personality as one that is not complete or whole being dominated by individual strivings of various kinds. Jung recognizes that some of these cases respond to Freud's concepts of infantile sexuality carried into the present situation, others to Adler's interpretation of self-assertive strivings. All troubles, thinks Jung, are due to some form of "childish passion for rational enlightenment." Neurotic individuals have separated themselves from the primitive, irrational or *religious* aspect of the mind. Jung's therapy consists in restoring the wholeness of personality, which process he calls "psychosynthesis." When the individual has achieved a genuinely religious attitude, the synthesis of the rational and the irrational is completed. As might be expected from this point of view, many of Jung's writings have a distinct flavor of mysticism.

AN EVALUATION OF PSYCHOANALYSIS

The reception accorded to the psychoanalytic theories has varied from extremes of uncritical acceptance to equal extremes of emotionally motivated rejection. Some persons have regarded Freud's theories as divine revelations, others see them as a hideous sexual perversion. From more rational viewpoints, the opinion of various psychologists ranges from that which regards the objective psychology of adjustment as a mere variant or offshoot of psychoanalysis, to that which considers objective psychology as a contradiction and refutation of psychoanalysis. All competent and informed persons, however, acknowledge psychology's historical debt to psychoanalysis for some of its problems and concepts. The objective psychological viewpoint has arisen from many sources and has included contributions from animal experimenters, pioneers in child study, physiologists, educators, non-psychoanalytic psychopathologists and

many others. Psychoanalysis is only one of a number of movements that have assisted psychology in attaining its present position, but the historical importance of this school must not be ignored.

Contributions of Psychoanalysis to Psychology. One of the most important contributions of psychoanalysis has been its rôle in bringing psychology to a realization of the existence and significance of those problems that are now termed "behavior adjustments." With few exceptions, the pre-Freudian psychologists were exclusively concerned with sensation, perception and intellectual processes in general. While research in these fields was exact and scientific, it was far removed from the critical problems of real human life. The study of the adjustments of the individual as a whole was left to physicians and to philosophers, its significance being unappreciated. Although other forces tended toward the same end, psychoanalysis assisted materially in making psychologists aware of the problems involved in personality and conduct.

Another very general concept that psychoanalysis shares with psychology is that of *causal determinism*. Psychoanalysis, from its beginnings, has held that all behavior is the result of discoverable causes. Partly because of this doctrine, psychology has come to look for causes underlying even such apparently accidental happenings as mannerisms and slips of the tongue, rather than to ascribe them to "error" and "chance." This concept, applied to behavior difficulties and mental disorders, is of greatest importance to psychological theory. Psychoanalysis and psychology agree that all behavior is caused and that the causes may be determined if we know enough of the past history of the individual.

Psychoanalysis was one of several influences that led psychology to adopt the *genetic approach* in understanding the problems of personality and of the neuroses. Prior to the psychoanalytic period behavior disorders were referred to two causes, to supposedly hereditary or "constitutional" predisposing factors and to recent thwartings and shocks undergone by the patient. Psychoanalysis, as has been seen, emphasizes an

other causal factor, that of the childhood development and experiences of the individual. Although psychology and psychoanalysis are as far apart as the poles on their views of the nature of infantile development, both agree on the importance of childhood in the formation of personality traits that predispose people to good or poor adjustments in later life. Psychoanalysis made an especially valuable contribution in bringing attention to bear on the very earliest years of childhood which, because they are forgotten by adults, were at one time deemed to be of no significance.

Psychoanalysis has also been of some service to psychology in emphasizing the dynamic or striving aspect of human behavior. Except for some rather mechanical theories of "instinct," psychology failed to notice the problem of *motivation* until it was forced to do so by the impact of psychoanalysis. In this matter as in the previous one, psychology does not agree with psychoanalysis as to the nature and sources of motive. But psychoanalysis presented the challenge and aroused controversy, leading eventually to the researches and theories by which psychologists have reached an understanding of the principles of human motivation.

Although the psychoanalytic concept of "the unconscious" has no place in objective psychology, the notion of the *nondeliberate determination of behavior*, which it represents, is one of indispensable utility. In earlier periods, many writers ascribed most of behavior either to "instinct" or to conscious and voluntary "willful" action. The concept that an individual may learn without being aware of the nature and significance of what he is learning is common to both psychology and psychoanalysis. Psychology has found the experimentally determined principles of the conditioned reaction and of blind trial and error learning useful in explaining this fact, while psychoanalysis has instead developed the theory of the unconscious mind.

Psychology is also indebted to psychoanalysis for the idea of the *sexual basis* of many adult neuroses. Although the objective approach does not give the same place to sex as does the Freudian theory, it recognizes sexual maladjustment as one of

the important precipitating causes of conduct disorders. Much credit must be given to Freud for his courage in advancing his sexual theories in the midst of the period of prudish Victorian morality.

Psychology and Psychoanalytic Therapy. A contribution of very doubtful value is the psychoanalytic system of investigation and treatment applied to cases of maladjustment and neurosis. Freud and many other psychoanalysts constantly assert that the proof of the psychoanalytic theory is that it "works," that it accomplishes the cure of neurotic patients. This notion is most naïve, for on the contrary, *that which "works" is not necessarily "true."* A fanciful illustration will make this dictum clear. Let us suppose that a child cries in the night. His mother may tell him to stop crying and that if he does not a bogey-man will come out of the closet and get him. This treatment "works" and the child ceases his cries but obviously this does not prove that there really was a bogey-man in the closet. The psychoanalyst "cures" a patient by persuading him that there is a "complex" in his "unconscious," but the objective existence of this entity is no more proved by the curative process than is the presence of the aforementioned bogey-man. In the field of abnormalities of behavior and of mental processes many systems of cure are constantly being invented and practically all of them effect the remedy of some conditions. Religious shrines are piled high with the crutches of persons cured of lameness by their devotions. In the eighteenth century, Mesmer cured folk by having them touch iron rods that had been energized with "animal magnetism." Our own day has seen many varieties of mental healing ranging from Christian Science to Couéism, none of which has any very good claim to scientific validity. In all of these instances, of course, the problem of psychology is to determine why the cure came about. The eventual aim of psychology must be to explain all forms of mental healing but in so doing it is impossible to acknowledge the exclusive merit of any one theory. Since psychoanalysis is the most recent and in many ways the least irrational of psychotherapeutic methods, objective psycholo-

gists use many of its techniques for the want of something better. Such use does not necessarily validate the assumptions on which the treatment was devised.

The therapeutic claims of psychoanalysis are rarely checked by objective tabulations of the proportion of patients cured by this system of treatment. The psychoanalysts, in their own writings, often give the impression that all cases are cured except those who discontinue treatment or who do not want to be cured. This is far from a true statement of the facts. Kessel and Hyman (1933) reported an impartial study of the results of treatment in thirty-three cases referred by them, as practicing physicians, to accredited and medically trained psychoanalysts. This number of patients is pitifully small, yet so lacking are other investigations in this field that the Journal of the American Medical Association referred editorially to Kessel and Hyman's research as "a rare — and in American medical literature — perhaps even a unique occurrence." The results of psychoanalytic treatment of these thirty-three cases were as follows:

1. Specific cures by psychoanalysis:	5 cases	(15%)
2. Patients helped but not cured by psychoanalysis:	5 cases	(15%)
3. Minor behavior problems remedied, but without use of psychoanalytic techniques:	3 cases	(9%)
4. Cured, but probably by environmental changes rather than entirely by psychoanalysis:	6 cases	(18.5%)
5. Not cured, patients' conditions relatively unchanged:	7 cases	(21%)
6. Not cured, patients developed serious mental disorder during treatment:	6 cases	(18.5%)
7. Suicide during treatment:	1 case	(3%)
	33 cases	(100%)

The 15 per cent of specific cures, surely not an imposing proportion, included three men and two women. One of the men suffered from a sexual perversion, the other two from symptoms of anxiety and conversion hysteria. The two young women were diagnosed as having "maternal conflicts." Of the five partial cures, three were anxiety states, one an unnamed neurosis, and one a sexual perversion. The authors state that they

were not as impressed with the amount of improvement in these cases as were the patients and the analysts. The three cases of minor behavior disorders were in adolescents who were relieved without an extensive psychoanalysis. Kessel and Hyman feel that any simple advice would have been equally successful in curing these three youngsters. The fourth category of the table refers to four patients who were cured by "sexual liberation" which the analysis undoubtedly facilitated and to two patients who lost their symptoms immediately after divorcing their disagreeable spouses!

The seven specific failures included five patients with anxiety symptoms, one so-called "constitutional inferior" and one alcoholic addict. One of these cases was definitely aggravated by a "clumsy analysis," the other six remaining practically unchanged. Whether the six persons who developed serious mental disorders and the one suicide should be charged against psychoanalysis is doubtful. It might charitably be assumed that these were cases in which no method of cure would have been effective. On the other hand not all of the mentally disordered persons showed serious symptoms in advance of treatment and it is not impossible that some of these people were harmed by the analysis.

Kessel and Hyman note that only the intelligent and educated patients and those under forty years of age were helped by psychoanalysis. They also call attention to the cost of analysis, three to six consultations being held per week over an average period of more than a year, at an expense of from three dollars to over ten dollars an hour. From these figures, an amount of fifteen hundred dollars may be taken to represent the average cost of an analysis. This study is hardly favorable to psychoanalysis, as the thirty-three cases were selected as ones likely to be aided by this method and were treated by practitioners of the highest repute. It seems probable that 15 per cent of specific cures and a further 15 per cent of partial cures could have been accomplished with equal success by other methods requiring a smaller investment of time and money.

Criticisms of Psychoanalysis. Objective psychologists do not support the psychoanalytic theories because of many serious defects that this point of view shows when examined according to scientific criteria. A first serious shortcoming of psychoanalysis is that it is based on *unreliable data.* In recent years psychologists have tended less and less to use introspection as a major method of research, even in such prosaic problems as remembering and reasoning. Even more unreliable than laboratory introspection are the methods of free association, drowsy recall and dream analysis by which the psychoanalysts claim to obtain their facts. The results of such processes of recall are ambiguous and hazy and are easily given any interpretation that suits the preconceived notions of the analyst. Furthermore, these data are obtained chiefly from neurotic individuals, who are notably unreliable and suggestible. It has long been known that such persons will readily believe anything, no matter how absurd, when they are told it with an air of authority. The psychoanalyst supplies much of his own data to fit his theories by interpreting the manifest content of associations and of dreams and then considering these interpretations as facts. If the patient agrees with the theory, it is thereby proved; if he does not, this is merely evidence of his "resistance"! This is a remarkable method for scientific procedure indeed! Even this kind of uncertain evidence is not made public by the psychoanalysts in such a manner as to allow impartial verification of the deductions drawn from it. Freud's writings convey the impression that he arrived at many of his most important theories as hunches or inspirations based on a single case. In no instance, save possibly in the material on dreams, are large numbers of examples of an unselected nature systematically tabulated in such a way as to permit unbiased examination. Psychoanalysts seem oblivious of the need and nature of controlled experimentation of an exact type. A series of case studies with made-to-order interpretations is termed a "research" by psychoanalytic journals. Freud (1933), in replying to the charge that psychoanalysis is not an experimental science, naïvely cites *one* experiment (involving the creation of

dreams by hypnosis) that was performed in 1912! In short, the psychoanalytic theories represent a fund of hypotheses created with romantic freedom, but never confirmed by any test acceptable to scientific method. Factually, psychoanalysis has hardly a leg to stand on.

A second very general objection to the methodology of psychoanalysis is that it employs *personified fictional concepts*. Psychoanalysis peoples the personality with a host of active, striving, opposed entities. Examples are numerous: the Super-Ego "battles" with the Id; the complex "strives" to express itself but is "pushed back" into the unconscious by the censor, whence it "comes out in disguise." According to this account, the human being is a stage upon which these actors, each with an independent individuality, play out their drama. Such personified terminology is far removed from the practices of experimental science, yet even the most learned psychoanalysts use these concepts as if they were real things and forces, rather than mere figures of speech. The animistic concepts of psychoanalysis appeal to popular thinking, for the unscientific person has always ascribed his behavior to such entities as "will," "soul," "sin" and "conscience" all of which have almost exact analogues in the Freudian nomenclature. As several psychologists have suggested, the Freudian entities bear a strong resemblance to the "demons" that, in ancient and mediaeval times, were supposed to inhabit mentally disordered persons. Any science needs concepts, but objective psychology prefers those based on laboratory investigations such as *motive*, *learning* and *inhibition* rather than the analogical concepts of "libido," "fixation" and "regression." The human being is not a composite whose "parts" come into "conflict," but a unified organism which responds to situations and is modified by its experiences.

Since psychoanalysis is founded upon such undependable methods and concepts, it is not surprising that many of its theories represent serious misinterpretations of the true facts. Although psychoanalysis made an important contribution in calling attention to sexual conflicts in adults, objective psychology

believes that it errs in its extreme extension of the doctrines of sexuality. It is true that many neurotics suffer from unsolved *adult* sexual problems. Upon discovering these cases, the psychoanalysts drew the conclusion that sex, in the form of "libido," was the motivating factor not only in all neuroses, but in all other life activities. Objective psychology regards this as an unjustified deduction. Even less supported by the facts is the theory which ascribes adult sexual aims to young infants. The conditioned adient or "love" responses of young children toward their parents are extremely important, as has been pointed out in previous chapters. There is no good evidence, however, that the child desires to possess the parent of the opposite sex in a sexual manner, not even "in the unconscious" as the analysts hold. Objective psychology sees this aim not as "unconscious," but simply as non-existent. While psychoanalysts have professed to find the cause of adult maladjustment in the infantile unconscious, it looks to psychologists as if they had done the opposite in *incorrectly assigning to the child's so-called unconscious the attributes of neurotic adult sexuality*.

Especially incredible to scientific thinkers are the psychoanalytic concepts of "inherited ideas," "the collective unconscious" and of "fixed symbols," elaborated by Jung but recently used to a considerable extent by Freud. There is no conceivable biological mechanism by which an idea, a thought or a symbol can be inherited. Even muscular reflexes are no longer considered as entirely native by many psychologists. The psychoanalysts seem to have perpetrated an error in regard to inheritance that was once prevalent among other psychologists, the fallacy of ascribing otherwise unaccountable traits to native endowment. In so doing, extreme psychoanalysts have placed in the infant's "unconscious" a knowledge of folk-lore, of primitive religions and of archaic symbolism that an anthropologist might envy. They have also endowed the child's unconscious with an allegedly native Victorian prudery and conscience that causes him "innately" to feel guilty about his love attachments. The concept of inherited ideas is closely related

to the theory of recapitulation, which holds that the child in his development repeats the history of the race, but which is now discredited by other schools of psychology.

Many psychoanalytic concepts seem to the outside observer to be justified only by their consistency with the general Freudian theory rather than by their adherence to observational facts. The notion of an orderly and inevitable course of infantile development through the "oral," "anal" and "genital" phases and through the "Oedipus" and "castration" complexes is regarded by objective psychologists as almost entirely without foundation. The child develops because varying environmental forces affect him and because he learns through his experiences. If he loves his mother during the early period of life, this is because she provides ameliorative and pleasurable stimulation, not because of any unconscious sexuality. When, at the age of six or seven, the youngster shows less interest in his mother, this should not be ascribed to the cure of a pathological Oedipus complex or to any predestined "latent" stage, but to his increasing independence and greater range of social contacts. The attempt to fit the facts of child development into the Procrustean bed of the Freudian theories has resulted in many strange concepts. Since the boy loves his father as well as his mother, the "inverted" Oedipus complex had to be assumed, which by its "inversion" ceases to be an "Oedipus" complex at all. The most fantastic notion of all is the "castration complex," which has been used with increasing frequency in recent years as an explanation for anxiety states. It is true that many children learn to fear their parents and to resent their authority, but the psychoanalytic assertion that these conditions represent a literally "unconscious" fear of being deprived of the genitals is absurd.

The psychoanalytic theories so far illustrated are not the most ridiculous and unfounded concepts of the system. A few excerpts from case studies made by leading psychoanalysts will show even more far-fetched hypotheses. A small selection of these, all from very reputable sources, is given here.

1. A fear of high places is explained as a disguised manifesta-

tion of a repressed desire to experience a moral "fall" with the patient's mother — the Oedipus complex. That the patient especially feared falling into water represents a desire to return to his prenatal condition, in the water of his mother's womb. His fear of falling also represents, through "projection," a repressed wish to throw down his father and his brother, for whom he had an unconscious hatred. Evidence was uncovered that would easily have accounted for the phobia as a conditioned reaction, but this is ignored by the analyst, who prefers the sexual theory. (Jones, 1913.)

2. A fear of mice, which was one of the milder symptoms in a generally hysterical woman, is accounted for in terms of sexual symbolism. The woman's anxiety is ascribed to the Oedipus complex. The mouse furnished a convenient symbol for her "ambivalence" toward her parents, being sexual (mice are little things that run into holes) and also a commonly hunted and tortured object, which satisfied the patient's "sadistic" tendencies. In criticism, one may wonder why the occurrence of such a common thing as fear of mice needs such an elaborate explanation. (Yates, 1932.)

3. A severe case of constipation is analyzed as due to "anal aggressive" tendencies arising from "oral deprivation." The patient had been thwarted in his love of his mother. His "unconscious reasoning" is described as "I do not take or receive, therefore I do not have to give," feces being, as in all psychoanalytic interpretations, the equivalent of a gift. In the course of the analysis, the patient developed an hysterical laryngitis that prevented him from talking. This is described as a "displacement" of the anal retention "upward" to the oral region. (Wilson, 1934.)

4. A woman's fear of open places (agoraphobia) is interpreted as a "projection" upon the external world of her innate feelings of guilt due to her love for her father (Oedipus complex). Feeling this guilt, she projects it to the opinion of people outside — to the market-place or agora — and hence, by analogy, fears streets and open places. (The fact that this woman had an aunt who had the same fear, from whom she might well have

learned it, is almost entirely ignored in the analytical interpretation.) (Miller, 1930.)

These four illustrations, selected as typical rather than as extreme psychoanalytic interpretations, clearly show the nature of the explanations employed by this school.

A further criticism of psychoanalysis often voiced by objective psychologists is that it is a very unhygienic system of mental hygiene. Many immature and uncritical persons who read psychoanalytic literature become seriously worried in consequence of a literal acceptance of its doctrines. One conscientious student of social work, on studying Freudian theories, was much disturbed by the thought that her love for her mother really meant, by "reversal-formation," that she hated her. Other students become self-conscious in the face of normal family affections, because of reading of "incestuous" sexual desires. Psychoanalysis often causes a morbid attitude toward matters that should be regarded more healthily with psychological simplicity and biological objectivity.

Many adherents of psychoanalysis are attracted to the theory because they know no other or because they lack training in scientific method that would enable them to distinguish between science and pseudo-science. Other persons, especially physicians and social workers, rely on psychoanalysis because it offers a finished system to apply to their urgent practical needs. Because objective psychology is more cautious in making generalizations, more concerned with experimental validation of its fundamentals, and on the whole more difficult to learn, it cannot hope to compete with psychoanalysis in popular acclaim. At the present time, psychology cannot explain with certainty all of the phenomena that psychoanalysis attempts to explain. Objective psychologists feel, however, that psychology offers a more substantial foundation. When further research has extended our present psychological knowledge, such temporary utility as psychoanalysis may now possess will have ceased to exist.

A BRIEF GLOSSARY OF PSYCHOANALYTIC TERMS

(The terms are here defined in their psychoanalytic meanings, rather than in their psychological meanings.)

Ambivalence. Strong antagonistic emotions, as love and hate, directed toward the same individual. Typical of children and neurotics.

Anal-erotic. Finding pleasure in defecation. This is the second stage in the localization of the infant's libido and is characterized by interest in and valuing of excretory products. The early anal stage shows pleasure in expulsion, hence in giving gifts; the later anal stage has pleasure in retention, hence in parsimony.

Anal-sadistic. Impulses to cruelty associated with the anal-erotic stage of development.

Archaic ideas. Ideas supposed to be inherited from primitive human times. See "collective unconscious."

Auto-erotic. The direction of the libido to the person's own body, but as pure sensation rather than with consciousness of self. (To be distinguished from "narcism.")

Bisexuality. The presence in persons of either sex of some of the psychic characteristics of the other sex. See "inverted Oedipus complex."

Castration complex (female). An unconscious feeling of inferiority on the part of a girl because she does not have male genitals, with resentment usually directed against the mother. See "masculinity complex."

Castration complex (male). An unconscious fear on the part of the boy that he will be deprived of his genitals as punishment for guilt, usually directed to the father.

Censor. A part or function of the Ego that prevents the repressed or native desires of the Id from becoming conscious except in disguised form.

Collective unconscious. Primitive ways of unconscious thinking, inherited from prehistoric ancestors. (Jung.) Freud also uses this concept, but not the name.

Complex. A group of ideas or desires of similar content, having an unusually strong emotional tone.

Conflict. An inner antagonism between tendencies, as between the Id and the Super-Ego. It results in the formation of "defenses" and in neuroses.

Conscious. That part of mind or personality of which the individual is aware.

Conversion. The transformation of an unconscious conflict into a physical symptom, such as a pain or a paralysis. (A dynamism.)

Death or destruction instinct. The opposite of Eros. It consists of regressive impulses, tendencies to self-punishment, and aggressive impulses toward others.

Defense dynamism. A device of thinking or conduct by which the Ego suppresses the demands of the Id for gratification.

Displacement. The transfer of emotional energy or attachment from one object or idea to another, usually to a more socially acceptable or less repressed one. (A dynamism.)

Dream analysis. A technique of psychoanalytic treatment in which the analyst discovers the content of the patient's unconscious by interpreting his dreams and the associations of his dreams.

Dream-censor. A part or function of the Ego that operates during sleep, compelling the Id to disguise its desires as expressed in dreams.

Dream-work. The labor that the Id performs in changing its real desires into the manifest content of dreams, performed because of the demands of the "censor." (A dynamism.)

Dynamism (also called *mechanism*). A device of thinking or conduct by which the Ego either allows the Id a substitute form of satisfaction, or else subdues its demands.

Ego. A part of personality, partly conscious, partly unconscious, that is in contact with the real world. The Ego mediates between the demands of the Id and the requirements of reality.

Eros. The life instinct, a fusion of sexual and self-preservative (self-love) tendencies.

Extravert. (Jung.) A person whose conscious life expresses itself by emotion, action and social participation. The opposite of "introvert."

Fixation. An excessive attachment of libido to some person or object, especially such an attachment to the parents or parent-imagos. Fixation lessens the amount of libido free for dealing with reality, hence predisposes to abnormal adjustments.

Free association. A technique of psychoanalytic treatment, in which the patient relates consecutive thoughts of any kind, leading eventually to cues as to the content of the unconscious.

Guiding fiction. (Adler.) A goal impossible of attainment, set up by persons with feelings of inferiority.

Id. An entirely unconscious, dynamic part of personality, consisting of primitive and anti-social desires that demand immediate gratification.

Identification. The moulding of the Ego after the pattern of a love-object. Gaining satisfaction by means of the achievements of others, which are felt to be the individual's own. (A dynamism.)

Imago or image. A phantasy of a love-object, usually idealized, especially of a parent, as "mother-imago."

Inferiority complex. (Adler.) A feeling of inability to gain the goal of superiority because of real or imagined defects or inferiorities.

Inherited idea. An idea, desire or taboo inherited from primitive ancestry. See "collective unconscious."

Introversion. The direction of the libido toward phantasy, satisfaction being found in imagined responses rather than real ones. (A dynamism.)

Introvert. (Jung.) A person whose conscious life expresses itself by contemplation, thought and phantasy. The opposite of "extravert."

Inverted Oedipus complex. The unconscious homosexual desire of an individual for the parent of the same sex, caused by bisexuality.

Latent content. The real, unconscious desires underlying a dream or a series of associations. This becomes distorted or disguised into the "manifest content" in the process of dreaming or associating.

Latent stage. A period of personality development, from about age six or seven to puberty, during which sexual aims are relatively dormant.

Libido. The psychic force or vital energy of the individual derived, according to Freud, from the sexual instinct.

Manifest content. The apparent and reported content of a dream or of a series of associations. This is a transformed or disguised version of the real meaning. See "latent content."

Masculine protest. (Adler.) The desire to be a man, occurring in both sexes, because maleness signifies strength and superiority.

Masculinity complex. The resentment and shame of the girl because of not being a man. The tendency to seek to compensate for this lack by father-identification or by the assumption of male traits. (Freud.)

Narcism. Self-love. The attachment of the libido to the Ego, which thus becomes the principal love-object of the individual.

Negative transference. The displacement of resentment or hate from one person to another, especially from the parents to the analyst, during the course of treatment. See "transference."

Neurosis. An inability to cope with reality because of a weak Ego or because of lack of free libido (vital energy).

Object-love. The attachment of the libido to other persons or things than the self.

Oedipus complex. An unconscious sexual desire of an individual for the parent of the opposite sex. Occurs in unconscious phantasy, the attachment being to parent-imagos rather than to the real persons of the parents.

Oral-erotic. Obtaining of satisfactions by means of the mouth.

It is the earliest localization of the infant's libido, and is divided into two substages, the early oral stage (pleasure in sucking) and the late oral stage (pleasure in biting, hence in destruction).

Oral-sadistic. The late oral stage of finding pleasure in biting and chewing, hence in destruction and cruelty.

Overcompensation. (Adler.) The exaggeration of a trait in order to conceal or overcome a real or imagined inferiority.

Phantasy. The expression of desires and urges in imagination. (A dynamism.)

Pleasure principle. The tendency for behavior to be regulated by subjective emotional factors. To seek pure gratification and avoid pain. The opposite of the "reality principle."

Preconscious. That part of mind or personality that is not conscious at the moment but that can be recalled without great difficulty.

Projection. Assigning to the external world the guilty desires of the self, thereby avoiding the necessity of acknowledging them as the individual's own. (A dynamism.)

Racial unconscious. See "collective unconscious."

Rationalization. A process of fallacious thinking carried out to protect the Ego from having to acknowledge the existence of guilty wishes. (A dynamism.)

Reality principle. The tendency to act according to the rational or expedient requirements of the external world. The opposite of the "pleasure principle."

Regression. The retreat of formerly free libido to an infantile localization or to an infantile love-object, as a flight from present difficulties. (A dynamism.)

Repression. The exclusion of painful ideas or desires from consciousness. It is performed by the Ego, on the demand of the Super-Ego. (A dynamism.)

Resistance. The inability or unwillingness of an individual to bring to consciousness memories, attitudes or desires relating to his complexes. It is closely allied to repression and is a function of the unconscious Ego.

Reversal-formation. The expression of the opposite of a real wish in order to strengthen repression. (A dynamism.)

Sublimation. The conversion of sexual energy (libido) into interests and satisfactions that are no longer directly sexual in aim, such as sports, social welfare or religion.

Super-Ego. A part of personality, partly conscious but largely unconscious, of hyper-moral character. It causes the Ego to curb the desires of the Id, and to feel guilty concerning gratification. "Conscience."

Symbol. An idea that represents another idea or an urge, especially in dreams. "Fixed" symbols have the same meaning in all dreams and originate from the racial unconscious.

Symptom. An abnormal behavior or thought that is a substitute gratification for a repressed complex.

Transference. The displacement of the libido from infantile love-objects to some other person or object, particularly to the analyst, during the course of treatment. See also "negative transference."

Unconscious. That part of the mind or personality that cannot become conscious. Its content, consisting of "archaic ideas" that were never conscious and of ideas repressed from the conscious, can be known only indirectly as through free associations and dreams.

Unconscious phantasy. The elaboration and satisfaction of desires and urges, carried out entirely in the unconscious, hence without ever being in awareness. (A dynamism.)

SUGGESTED READINGS

As a general reference on psychoanalysis, Healy, Bronner and Bowers, *The Structure and Meaning of Psychoanalysis*, is unexcelled. The organization of the chapter on psychoanalysis owes much to this book. Easier and more popular accounts of this subject, written by psychoanalysts, are Murphy and Jensen, *Approaches to Personality*, chaps. 4–6; Kranfeldt, *Secret Ways of the Mind*; and Van Teslaar, *An Outline of Psychoanalysis*. A clear and unprejudiced description of psychoanalysis by an objective psychologist is contained in Woodworth, *Contemporary Schools of Psychology*, chap. 5. More critical appraisals of psychoanalysis from the objective point of view are given by Hollingworth, *Abnormal Psychology*, chaps. 2, 3, 6 and 7; Dorcus and Shaffer, *Textbook of Abnormal Psychology*, pp. 106f; Moss and Hunt, *Foundations of Abnormal Psychology*, pp. 223f; Jastrow, *The House That Freud Built*; and Dunlap, *Mysticism, Freudianism and Scientific Psychology*.

Some of the original psychoanalytic sources are not particularly difficult to read. An interesting sequence of Freud's works is *The Psychopathology of Everyday Life; General Introduction to Psychoanalysis; New Introductory Lectures on Psychoanalysis*; and *The Interpretation of Dreams*.

"Individual psychology" is well represented by Adler, *Understanding Human Nature; The Neurotic Constitution*; and *The Practice and Theory of Individual Psychology*.

"Analytical psychology" is clearly summarized in a popular manner by Jung, *Modern Man in Search of a Soul*, and by the same author's more technical *Contributions to Analytical Psychology*; and *Psychological Types*.

Flügel, *The Psycho-Analytical Study of the Family*, has been an influential book in psychoanalysis, especially among social workers. Klein, *The Psychoanalysis of Children*, reaches some fantastic conclusions, but is interesting in method.

Part IV
TECHNIQUES OF MENTAL HYGIENE

CHAPTER XV

THE MENTAL HYGIENE STUDY OF THE INDIVIDUAL

MENTAL HYGIENE

The Meaning of Mental Hygiene. Mental hygiene refers to the prevention of inadequate adjustments and to the processes by which maladjusted persons are restored to normal living. Mental hygiene is therefore a practical art, the practice that is based on the experimental findings and on the theories of the psychology of adjustment. The two aspects of mental hygiene, prevention and cure, overlap to a considerable degree. It is well recognized that in the field of physical hygiene, the cure of a minor illness may result in the prevention of a more severe one. Similarly, the treatment of petty disorders of behavior may be the means of preventing them from reaching serious proportions. Just as physical hygiene is concerned with the health of those who are well as much as with those who are sick, so mental hygiene also has implications for all persons. In the broadest sense, the aim of mental hygiene is to assist every individual in the attainment of a fuller, happier, more harmonious and more effective existence.

The term *mental hygiene* is not a new one, these words having been used together at least as early as the middle of the last century. A wider significance has been given to the concept in recent years, largely through the efforts of the National Committee for Mental Hygiene and its allied local organizations. The pioneer society of this type was formed in Connecticut in 1908, closely followed by the establishment of the national organization in 1909. Both of these committees owed their start largely to the efforts of Clifford W. Beers. When a young man, Mr. Beers had developed a serious mental disorder which kept him a patient in mental hospitals for several years. Recovering, he wrote his well-known book, *A Mind That Found Itself*,

and decided to devote the rest of his life to the cause of mental health. The activities of the National Committee for Mental Hygiene were at first directed principally toward the amelioration of the condition of patients in mental hospitals. It has made many surveys of states and of localities with respect to the amount of mental disorder and the provisions made for the care of mental patients. It has agitated for laws substituting a medical and psychological viewpoint for the older legal one in the commitment of patients, and has done much to encourage research and to raise standards of training in psychiatry. The care and training of the mentally deficient, and the re-education of prisoners have been other prominent fields of activity of the National Committee. Because of these efforts on behalf of the insane, some persons have formed the misconception that mental hygiene is concerned only with the more serious disorders. This is not the case. Especially since 1922, the National Committee has promoted psychological clinics for children, psychological services for schools, and has furthered general popular education in problems of personality adjustment and conduct disorders. These last-named endeavors are most closely related to the psychology of adjustment. The publications of the National Committee and its quarterly periodical, *Mental Hygiene*, have been important factors in the dissemination of information concerning behavior problems, and in moulding public opinion toward a recognition of their significance.

The Practice of Mental Hygiene. For convenience, the practice of mental hygiene may be divided into two parts. The positive guidance of the ordinary course of life in such a way as to promote desirable traits of personality and to avoid causing maladjustments is the function of every individual. Parents, teachers, employers, in fact everyone who has some control or influence over another person, have either a favorable or an unfavorable effect on the quality of the adjustments of that person. The practice of positive and constructive mental hygiene is not limited to any professional group. It is a common social duty, and is susceptible to improvement by means of general and popular education. The training of parents, teachers and others

to regard behavior problems constructively is one of the most significant activities of the mental hygiene movement. A subsequent chapter will suggest a few of the areas in which mental hygiene may be applied in the course of everyday living.

The other aspect of mental hygiene is the study and treatment of persons who are already maladjusted. This is a professional service that requires a large amount of special education and experience. For an inadequately trained or inexperienced person to attempt sole responsibility for the treatment of an adjustment problem is fraught with almost as much danger as to practice general medicine without proper qualifications. The study of the psychology of adjustment is one of the prerequisites for practice, but is far from being the sole requirement. The sections on techniques of mental hygiene are included here to inform the reader as to what the practitioner does, not to prepare him to do these things himself.

The qualifications required for the professional practice of mental hygiene are not as yet well standardized. Psychiatrists, other physicians, psychologists, social workers, teachers and school administrators take part in the study and treatment of maladjustments with varying degrees of independent responsibility and of success. There is an increasing and justified realization in recent years that medical training is the best basic qualification for practice with maladjusted persons. This is argued partly because of the importance of physical factors in adjustments that none but a physician can deal with properly, and partly because of the high standards of medical education, supported by law, which tend to debar quacks and incompetents from practice. Ordinary medical training, however, provides little or no teaching of psychology, which is essential to mental hygiene work. A specialty within the field of medicine, psychiatry, has long allied itself with psychology through the study of serious mental disorders. But even many psychiatrists are not fully prepared to attack mental hygiene problems. Most of them have been accustomed to dealing only with cases of severe or institutional types, and are likely to see "nothing wrong" when confronted with milder maladjustments.

They also lack experience with the techniques used in simpler mental hygiene cases, especially those employed with children. Recently, a number of younger psychiatrists have been given specific training and experience in solving maladjustments at some of the outstanding mental hygiene clinics. This combination of training in medicine, in psychology and psychiatry, and finally in mental hygiene practice, constitutes the best equipment available today for dealing with the common maladjustments of behavior and personality.

Other less fully trained persons are giving mental hygiene service of considerable value. Personal competence in this field can in a very reasonable degree be attained by reading and experience, and cannot be stated precisely in terms of degrees received or courses of study completed. General physicians are often forced into mental hygiene practice through the prevalence of psychoneurotic cases that come to them disguised as ordinary medical problems. Many physicians have estimated that as much as half of their practice deals with patients whose complaints are largely psychogenic, usually of the hysterical type. Non-medical psychologists may render sound mental hygiene service, especially in schools and colleges. Social workers with special training in psychiatry and psychology are applying mental hygiene techniques in family and recreational work and especially in children's agencies.

The four principal branches of learning connected with mental hygiene have had considerable influence on each other. The term *orthopsychiatry* has recently been coined to designate the fusion of psychiatry, medicine, psychology, and social work as applied to problems of adjustment. There should be no controversy among the personnel of these fields as to which is best qualified. Mental hygiene uses methods drawn from all four, and no single technique is entirely sufficient in itself.

Mental Hygiene Clinics. The minimum organization needed for practical work in mental hygiene is a single adequately trained person. Many psychiatrists and psychologists who work alone render mental hygiene service of great value. There is an increasing movement, however, toward the organization

of mental hygiene clinics, in which a group of specialists cooperate in attacking problems of conduct and adjustment. The first psychological clinic was founded in 1896 at the University of Pennsylvania by Lightner Witmer. The pioneer clinic of the modern type was the Chicago Juvenile Psychopathic Institute, now the Institute for Juvenile Research, organized in 1909 under William Healy. Some clinics, as that of the Boston Psychopathic Hospital and the Phipps Clinic of Johns Hopkins Hospital have worked with both adults and children. The largest number of clinics have been concerned primarily with children, in recognition of the importance of the early period of life in preventative work. A great impetus was given to the establishment of clinics for children by the Commonwealth Fund which, between 1922 and 1927, maintained "demonstration clinics" for short periods of time in a number of cities and in one rural county. Although several of these clinics failed to survive after the support of the Commonwealth Fund was withdrawn, much was learned about their organization, and interest was stimulated throughout the country. From two full-time clinics in the United States in 1919, the number grew to 83 clinic-units [1] in 1931.

Clinics that offer service primarily to children are usually termed "child guidance clinics" or "child guidance centers." The average staff of such a clinic consists of one psychiatrist who is the executive head, one psychologist, a part-time pediatrician, two or three psychiatric social workers and two or three clerks. With this staff, approximately 300 new cases per year can be accepted for study and treatment. The cost of a clinic of this scope is about $20,000 a year. The Commonwealth Fund's studies indicate that a clinic usually cannot be supported by cities of under 200,000 population. Smaller communities have been successfully served by part-time or traveling clinics, of which there are a considerable number in operation in New York, New Jersey, Massachusetts, California, and Illinois.

[1] A clinic-unit consists of the minimum staff for effective work. Some of the largest clinics were counted as more than one unit, part-time clinics as less than one. (Stevenson and Smith, 1934.)

One of the greatest contributions of the child guidance clinics to mental hygiene practice has been in bringing together the professions of psychiatry, medicine, psychology and social work in an attack on problems of behavior. In the clinic, the psychiatrist usually acts as director and assumes the principal responsibility for the diagnosis and treatment of most problems of personality. Aside from executive duties, his chief work consists of interviewing persons from whom direct information is needed, or to whom direct treatment is being given. Since many problems of children originate from the personality traits of their parents, the psychiatrist must be prepared to attack adult adjustive difficulties as well as those of boys and girls. The psychiatrist presides at the staff conferences held on each case, and usually guides the discussion. Some clinics include a pediatrician, a specialist in the diseases and physical disorders of childhood. When no pediatric service is provided on the staff itself, the facilities of near-by hospitals or medical clinics are used. In many clinics the psychiatrist makes the physical examination. Sometimes this is dictated by economy, but some psychiatrists believe that valuable insight into the case is gained by first-hand knowledge of the physical findings and by noting the patients' attitudes toward himself that may be expressed in the course of this examination.

The psychologist of a child guidance clinic that has a psychiatrist as its head usually performs a more definite and limited function. A universal duty is the administration of mental and educational tests and of other instruments of measurement designed to discover special aptitudes or disabilities. The field of mental testing is itself a complex one, and requires special training and experience. About one third of the psychologists attached to clinics in 1934 had the Ph.D. degree; practically all of the rest had that of Master of Arts. Since the psychologist is likely to be the best-informed person concerning school problems, he often makes the contacts with the schools, and supervises the re-education of children in whom academic disabilities are important contributing causes of maladjustment. The extent to which the psychologist assumes responsibility for the

treatment of general personality problems varies greatly from clinic to clinic, depending on the training and qualities of the person who occupies the position, and on the attitude of other members of the staff. In some clinics the psychologist does little more than testing, in others he is a full collaborator with the psychiatrist in the most delicate matters of diagnosis and treatment.

The initial duty of the social worker in a clinic has been to gather the facts of the case history. Working more outside of the clinic than do the other members of the staff, the social worker interviews parents, employers, teachers and representatives of social agencies. When integrated with the findings of the psychiatrist and the psychologist, the case history is of indispensable value in understanding the origin of maladjustments. Because she is in close contact with the parents of the child, a skillful social worker sometimes assists in adult readjustment, relieving the psychiatrist of a part of this duty. Social workers also carry out many of the procedures of clinical treatments, especially those which involve the provision of recreational outlets and the modification of the patient's environment. Psychiatric social work has become a recognized speciality within the general field. Several schools, notably the Smith College School for Social Work and the New York School of Social Work, offer advanced training. Most of the larger clinics provide experience for young social workers who serve as apprentices.

The core of the psychological clinic is not the separate activities of the professions represented, but is the interaction of these various approaches to the individual. Psychiatrist, psychologist and social worker freely borrow each other's techniques, concepts and attitudes, resulting in a broader service than any could render individually. The full understanding of problems of personality and conduct arises from the combination of medical, psychological and social knowledge.

THE APPROACH TO CASE STUDY

Mental Hygiene Problems and Their Sources. Child guidance clinics and also individual practitioners endeavor to select cases for consultation and treatment that are likely to profit from the type of service offered. In general, the problems presented must be sufficiently severe to warrant the necessary expenditure of time on the part of expert and often overworked specialists. Minor conduct and school problems that should be handled successfully by parents or teachers alone are often given only a single advisory consultation. On the other hand, the problem must not be too serious or incapable of modification. Clinics and psychologists do not ordinarily care for cases of fully developed psychosis or of pronounced mental deficiency, these being referred to mental hospitals and to institutions for the care and training of the feeble-minded. Cases in which physical disorders are the most prominent features are also referred to other agencies. The fields in which psychological guidance service is most profitable are well described in a circular of information issued by the Institute for Child Guidance, New York:[2]

1. Children who present problems because of socially unacceptable behavior (whether legally delinquent or not) such as: temper tantrums, fighting, teasing, bullying, disobedience, "show-off" behavior, truancy, lying, stealing, rebellion against authority, cruelty, sex difficulties, etc., shown at home, school or elsewhere.
2. Children who present problems manifested chiefly in personality reactions, such as: seclusiveness, timidity, sensitiveness, fears, cowardliness, excessive imagination and fanciful lying, "nervousness," excessive unhappiness and crying, stubbornness, selfishness, restlessness and overactivity, unpopularity with other children, and the like.
3. Children who present problems in habit formation such as: sleeping and eating difficulties, speech disturbances (such as stammering), thumb sucking, nail biting, masturbation, prolonged bedwetting, etc.

[2] Quoted in Stevenson and Smith, *Child Guidance Clinics*, p. 73. New York, Commonwealth Fund, 1934.

To this list may be added difficulties in school progress shown by children of normal intelligence. Many of these cases are of special school habit disabilities, but others involve sensory defects and general personality problems.

Each case referred to a child guidance clinic is accompanied by a "complaint problem," which describes the reason for seeking psychological service. These complaint problems are not diagnoses, as they are made by the public, not by the clinic. They serve, however, to define the areas of the service that the clinic renders. Of the reasons for reference met by the Institute for Child Guidance in five years of work, the following were the most common, in order of frequency:[3]

Disobedience, negativism, stubbornness, and rebelliousness
"Nervousness"
Temper
Stealing
Truancy, home and school
Lying
Feeding difficulties
"Does not get along with other children"
Retardation in school
Enuresis
School failure
Speech difficulties
Disturbing behavior in school
Finger sucking and nail biting
Placement, adoption
Overactivity
Shyness, withdrawal
Sleep disturbances
Fears
Excessive phantasy
Restlessness
"Cries easily"
Masturbation
Unhappiness
Fighting
Sibling jealousy
Sensitiveness
Reading difficulties
Obscene language
Quarrelsomeness
Lack of concentration
Developmental testing
Destructiveness
Mental retardation
Staying out late
Laziness
Physical defects

The most common of these complaints was met in only 12.7 per cent of the 3599 children studied. The next most common problem cited occurred in 8.6 per cent, and the others given range from this frequency down to 1.4 per cent. Most individual children were referred with more than one complaint, from 1.5 to 2 complaint problems per child usually being reported.

[3] Lowrey and Smith, *The Institute for Child Guidance*, pp. 114–115, New York: Commonwealth Fund, 1933.

The sources from which children are referred to guidance clinics vary considerably from city to city. In some places clinics are connected with juvenile courts and have an unusual number of problems of delinquency. School clinics naturally receive their cases largely from teachers and are more concerned with educational difficulties. Some clinics accept many cases referred by their parents, others do not take children from this source. As a large clinic not connected with other agencies, the Institute for Child Guidance may again be cited. Over a five-year period, 30.7 per cent of its cases were referred by agencies, 20.6 per cent coming from social agencies, 4.9 per cent from health agencies, 1.6 per cent from children's homes and 3.6 per cent from settlements and clubs. Schools referred 28.0 per cent of the children, parents and relatives 22.5 per cent and physicians 1.3 per cent, the remaining 15.7 per cent coming from other sources.

Methods of Investigation. Before the treatment of an adjustment problem can be started, it is necessary to learn a great deal about the individual's past history, present environment, and adjustive attitudes. The first need in case study is therefore the accumulation of a large amount of information that may lead to a discovery of the significant antecedents, the "causes," of the inadequate adjustments or personality traits displayed. The complaint problem calls attention to the behavior symptoms that, in the opinion of the referring person, need attention. Since these statements are made by teachers, parents and others with relatively little psychological training, they rarely identify the exact problem that needs treatment, and are even less informative concerning the causes of the condition. Thus in the case of James G. (p. 145), the problems that caused him to be referred were ungovernable conduct in school, bullying and stealing. Only an extended study of the boy's history and of his present attitudes revealed the underlying causes, which were severe reactions of inferiority to physical competition. Because human personality traits and behavior are formed by an active trial and error process, apparently similar causes may lead to different end-results, and the same symptoms may arise

in different individuals from a variety of causes. Before any effective course of treatment can be outlined, it is necessary to obtain a vast fund of information about the individual and to make hypotheses as to the origins of the characteristics to be modified.

The information gathered by a clinical organization concerning any well-studied case is much more extensive than that reported in any of the case descriptions in books. A large amount of data of varying degrees of significance is usually obtained. This must be integrated, and a certain amount of selection among the available facts must be exercised before the case can be interpreted. The sources of information concerning a clinical patient may be divided conveniently into two classes; the objective information obtained largely from sources other than the individual, and the data obtained by talking with the patient himself. The "outside" data are gathered by the techniques of *indirect examination* or the *case history*. The "inside" facts are acquired by *direct examination*, which includes the interview and its modifications, psychological measurements and the physical examination. These two techniques are not absolutely separate. Information may be obtained from an individual in regard to his past experiences and habits that is of a character intermediate between the direct and indirect examination data. Also, an interview with a parent of a maladjusted child may constitute an indirect examination of the child's background, and at the same time may be a direct examination of the parent's attitudes and of positive intrinsic value.

INDIRECT EVIDENCE — THE CASE HISTORY

The Method of Case Study. The case history of an individual is a description of his environment and background and of the influences that have affected his development. The method of case study is very largely a contribution to psychology from the field of social work. Toward the end of the last century social workers began making systematic investigations of the appli-

cants to family relief organizations. At first these studies were made to determine if the client was "worthy," and if other means of assistance were not available. From this beginning, the case study gradually developed into a method for understanding the individual or the family group, in order to administer the kind of aid most needed and ultimately to restore self-help through guidance and training. When psychiatry, psychology and social work became combined in the form of the child guidance clinic, social workers naturally fell heir to the task of gathering most of the case histories, a rôle for which they had already developed techniques.

The case study method found ready acceptance among psychiatrists and psychologists, for it offered a practical means for applying the genetic point of view. The psychiatrist in practice and the psychologist in theory had come to recognize the incompleteness of a diagnosis based only on the present condition of an individual without inquiry into the development of his traits. Since personality and behavior are the result of an individual's past experiences and adjustments, the value of the developmental history is obvious. The mental hygiene movement has had a reciprocal influence on social case work in general. All branches of social work now conceive their objectives in terms of the personality adjustments of their clients.

Case study data are here distinguished as the facts obtained principally from sources other than the subject himself. These data come from observations made of the subject and of his surroundings, and from the reports of others concerning him. The chief sources of information are interviews with the parents of the subject and with other members of his family, with his employers, his teachers and his associates. Records of schools, courts and of social agencies are utilized when these are available and pertinent. Objective observations of the assets and defects of the individual's environment are also made. The case history method is too little used by psychoanalysts and by many psychiatrists and psychologists who work alone, either because they are not equipped to carry it out, or because they deny its value. On the other hand, some social agencies overemphasize

the outside study and place too little value on the individual's own account of his problems and attitudes.

An Outline for Case Study. A synopsis of the principal areas usually covered by a case history may assist in understanding the clinical approach. It may be of value to teachers and parents who will not make complete professional studies alone, but who may be called upon to co-operate in the formulation of a case study. To enumerate all of the factors that are included in case histories is impossible, for any competent attempt to do so would be a book in itself. The outline below is intended only to suggest the scope of case study, especially to those who have no training in social case work. For convenience, some data not usually gathered by the social worker have been included, such as the results of the physical examination and of mental and educational tests.

Not all of the points enumerated in the outline are investigated in every case, while in some instances detailed accounts are made of matters touched on only lightly here. The important function of a case history is to gather all of the pertinent data. It is desirable, therefore, to keep the method of case study flexible. The study of a maladjustment cannot be crammed into any set scheme of case history. Instead, the method of approach must be modified to meet the problems offered by the individual. In some clinics a shorter history is prepared, an experienced social worker judging what is pertinent to the case. This is timesaving, but has the disadvantage of neglecting facts that may become significant as study and treatment progress. It is better to gather too much information than too little. Most of the outline which follows is designed for child cases, since a full case study is most useful with children. For adults an adaptation of some sections is necessary, but the childhood experiences and parental attitudes even of grown persons are not to be ignored.

CASE HISTORY OUTLINE

A. *Identifying Data.*

Name. Address. Date of report. Date of birth (verify from records). Age. Place of birth. Sex. Race. Nationality. Marital status. Occupation. By whom referred.

B. *Statement of the Problem.*

1. *The "Complaint Problem."* Why was the subject referred for study? How do parents, teachers, etc., conceive his problem? Give in the words of the person referring.
2. *Worker's Statement of Nature of Problem.* Exactly what behavior does the subject show that merits study? Cite specific examples. To what situations does he respond by this behavior?
3. *History of the Problem.* When was this behavior first noted? Has the subject reacted similarly at any previous time? Under what circumstances? Are there recurring patterns of response to recurring frustrations?

C. *Family and Social Environment.*

(Little emphasis is placed on heredity and much on environmental influences.)

1. *Persons in the Home.* For each of the following persons, give: age; education; health; outstanding personality traits; social behavior; adjustments to each other; attitude toward the person being studied; and other pertinent facts.
   - *a.* Father.
   - *b.* Mother.
   - *c.* Step-parents, if any.
   - *d.* Siblings — ages; position in family; comparative strength, health, and school accomplishments; any facts of favoritism.
   - *e.* Grandparents — direct effect on the subject through home contacts, if any; indirect effect through the formation of the traits of the parents.
   - *f.* Other relatives, if of direct or indirect influence.
   - *g.* Boarders, or other unrelated persons residing in the home.
   - *h.* Parents' associates, close friends, visitors, if pertinent.
2. *Home Attitudes.* What are the attitudes of the persons in the home, individually and collectively, toward the subject and his problems?
3. *Control and Discipline.* How is the subject managed by his parents? Is he given responsibilities? What methods of

punishment are employed? Are parents in agreement as to control?

4. *Economic Status of the Family.* What is the general economic level? Have there been any marked economic changes?
5. *Cultural Status of the Family.* What is their regard for education, books, cultural advantages?
6. *Language Spoken in the Home.* What language? Quality?
7. *Neighborhood.* General social, economic and cultural conditions.

D. *Physical Conditions and History.*

1. *Physical Examination.* When made? How do the patient's size, development and strength compare with norms? General constitution. Defects of vision or hearing. Neurological findings. Endocrine disturbances. Infectious conditions. Teeth, nose and throat. Special tests.
2. *Physical Development.* What has been the course of development of size and strength? Have any anomalies of growth been present? General disease history. Injuries. Right or left-handed? Have any changes in handedness been made?
3. *Conditions Especially Related to Adjustment.* Disorders of the nervous system, chorea, encephalitis, etc. Any "spells," seizures, convulsions, etc. Sleepwalking. Physical symptoms of probable hysterical basis, such as aches, "nervous indigestion." "Nervousness." "Nervous breakdowns."
4. *Sex Development.* Age of puberty. Any other pertinent facts.

E. *Developmental History.*

1. *Prenatal Period and Birth.* Mother's health during pregnancy; condition of birth; birth injuries; normal or premature birth.
2. *Early Developmental Signs.* Age at which weaned; age of teething; ages of holding head erect, standing and walking; age of talking; age of learning to read; control of elimination; self-help in feeding, dressing, etc.
3. *Intellectual Development.* Results of mental tests administered at present time. Records of previous tests. Any indications of general mental superiority or defect. Special talents or disabilities.
4. *Speech Development.* Record of any speech defects.
5. *Emotional Development.*
   a. Rage behavior. Tantrums; modified forms of rage. How frequent? In what situations?

b. Fear behavior. General fears; shyness. Specific fears; situations feared most; experiences conditioning these fears. Night terrors.

c. Love behavior. Attachments to parents or others. Dependence.

d. Emotional balance. Overemotional or apathetic. Any tendency to elation and depression. Periodicy of emotional behavior.

6. *Social Development*. Extent of social experiences. Successes or failures in group adjustment.

F. *Educational History*.

1. *School Progress*. Age entered school. Acceleration or retardation. Special classes. Trend of school marks. In the case of adults: success at school; units completed.
2. *Educational Status*. Results of educational achievement tests. Special abilities or disabilities.
3. *School Adjustment*. Conduct and discipline problems. Attitude toward school. Truancy.
4. *Educational Plans and Ambitions*. Are there discrepancies between plans and abilities?

G. *Economic History*.

1. *Occupation*. Exact nature of the work done. Rewards. Success or failure in work. Attitude toward occupation.
2. *Occupational History*. Positions. Dates. Salaries. Success or failure. Reasons for leaving a job.
3. *Vocational Plans and Ambitions*. Are the ambitions attainable with the subject's ability and opportunities?

H. *Legal History*.

1. *Delinquencies, Court Records* (if any). Exact nature of the delinquent behavior. What steps were taken? What is the effect of these experiences on the subject's attitude?

I. *Habits, Adjustments and Satisfactions*.

1. *Routine Habits*. Routine of work, recreation, eating, sleeping. A typical time schedule is sometimes helpful.
2. *Play, Hobbies and Interests*. Are recreations typically social or solitary? What does the subject voluntarily do for pleasure? Special skills and interests in hobbies. Reading. What kind of books? Movies, and other organized recreation.
3. *Imaginative Satisfactions*. Wishes, daydreams, remote ambitions.
4. *Sex Habits*. Sex knowledge, experience and interest. Masturbation. Attitude toward the opposite sex. Attitude toward sex questions.

5. *Social Habits.* Does the subject have few or many friends? How does he get along with his associates? Leader or dependent? What are his typical social contacts and activities?

DIRECT SOURCES OF INFORMATION

Physical Examination. The general physical examination is an important part of the clinical study of an individual. Ideally, every person referred should receive a thorough medical examination, even though the physical factors may eventually be judged insignificant in a large proportion of cases. The results of routine physical examinations given by school physicians may be used in some instances, but it is preferable to have the medical examiner relate his task directly to the behavior problems that are evident. For this reason, the physical examination may be given advantageously by the psychiatrist of a clinic.

A physical examination made for the purpose of assisting the study of personality makes the usual observations concerning the skeletal, muscular, digestive, respiratory, circulatory, excretory, reproductive and nervous systems. It does not content itself with a routine procedure, however. Special attention is paid to the possible direct organic causes of maladjustment, including neural diseases and injuries, drugs, toxins, and the functioning of the endocrine system. Conditions such as focal infections, malnutrition, and certain glandular disturbances may keep an individual at a low energy level and hence predispose him to inferior adjustments. Sometimes annoying physical conditions which cause pain, inconvenience or apprehension may underlie persistent nonadjustive reactions. The secondary psychological effects of weakness, fatiguability, small size and injuries have already been noted in several case studies. The physical examination also has an important function in distinguishing between ailments that have organic causes and those that may be hysterical in nature. The attitude of the subject toward himself, toward his disabilities, and

toward the procedures employed in the examination (as undressing) often throw light on his traits of personality.

Psychological Examination. The object of the psychological examination, or testing program of a guidance clinic, is to furnish evidence concerning the abilities and accomplishments of the individual. At present, the most reliable tests are found in the intellectual field. This is an important area of personality, but too much must not be expected from mental tests alone. Their numerical scores tell little about the attitudes, habits and emotional elements that are of primary concern in adjustment. The extent of the psychological examination varies with the problems to be studied. In the case of adults who present only difficulties in some aspect of personality adjustment, mental tests may be omitted entirely. With children whose lack of school progress is a conspicuous factor, the testing program may be very elaborate.

A minimum program for testing a child who is receiving a thorough clinical study might be described as follows:

1. An age-level verbal mental test, usually of the Binet type, such as the Stanford Revision of the Binet Tests.
2. A series of Performance Tests, such as the Pintner-Paterson Scale (1917) or the Arthur Scale (1930). Performance tests, in general, secure a mental rating that is relatively uninfluenced by language ability, and therefore less affected by cultural environment. A number of performance tests have individual diagnostic interpretations of at least suggestive value. An example of such a test is the Porteus Mazes, described in Chapter XI.
3. A battery of educational achievement tests, suited for the child's educational level. At the elementary school stage at least oral reading, silent reading comprehension, vocabulary, arithmetic and spelling should be included. In cases involving school misconduct these objective tests are the only reliable means for determining what the child knows, since teachers' marks are, unfortunately, often colored by the pupil's conduct as well as by his achievement.

The clinical psychologist selects additional tests that are suitable for the particular problems that the subject offers. When school disabilities are notable features of the maladjust-

ment, specialized diagnostic educational tests may be employed. Several techniques have been developed for the detection of the causes of failures to learn in reading, in arithmetic and in handwriting. Diagnostic testing discovers the nature and origin of the child's weak points, and indicates procedures for remedial training which is often carried out under the supervision of the psychologist. Special tests in motor functions are sometimes employed to measure speed, precision and skill in manual acts. Sensory and perceptual tests of visual and auditory abilities are used by psychologists in some cases. Other psychological tests available include memory and learning tests, mechanical ability tests, and tests of appreciation and sensitivity in music and in graphic arts. The last-named group of measures have been used more for research than for individual guidance.

Personality questionnaires are not used to any great extent with individuals of whom a thorough clinical study is being made. The case history and interviews provide the data concerning personality traits, and are regarded as more valid than the paper and pencil techniques. Questionnaires are useful for the purpose of making an objective comparison of an individual with others of his group, and for surveys and research. The questionnaire is also employed in connection with brief consultation services given by psychologists and counsellors to high-school and college students, in which a full case history is not obtained.

A convenient method of representing the psychological test data for reference or discussion is the *trait profile* or *psychograph.* Each test rating is indicated graphically on a horizontal line designating the test and a vertical line showing the score made. All test results of a profile must be made comparable by expressing them as age-level scores or as percentile ranks in some defined group. Two illustrations may be given. The psychograph of H. C., a boy of 12 years and 7 months of age, is shown in Figure 25. His verbal mental ability is somewhat retarded, as is shown by the M.A. of 10–4 (I.Q., 82) on the Stanford Revision of the Binet Tests. On the non-verbal perform-

ance tests, however, he makes an age rating of 12 years (Performance I.Q., 95). That his handicap is largely verbal is confirmed by the age score of 9–10 on the Trabue Language Completion Scale which measures language manipulation ability.

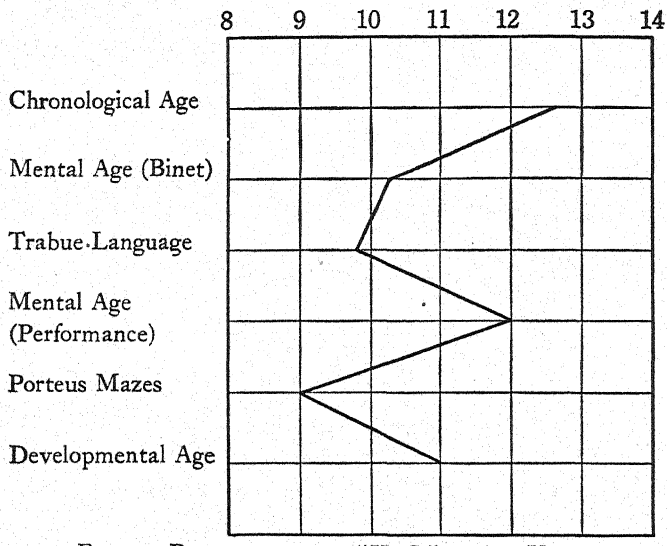

FIG. 25. PSYCHOGRAPH OF "H. C." IN AGE UNITS

This boy shows a low M.A. for his age on the Binet test, which seems due to a language handicap, since he scores higher on performance tests and does poorly on the language scale.

Notably low among the performance tests is the score on the Porteus Mazes, which suggests impulsiveness and lack of foresight. The Developmental Age, a measure of social maturity (Furfey, 1930), is that of age 11.

For older subjects, the age-level method of evaluating test results is not available, and percentile ranks are usually used. The percentile rank of an individual is the per cent of persons in some defined group whom he exceeds in score on the test in question. The profile of E. Y., a college freshman, eighteen years of age, is shown in Figure 26. His percentile ranks on two group tests of mental ability are 12 and 6 respectively, among college students. On one of these tests (the Carnegie Mental Ability Test) scores on word manipulation abilities, number manipulation abilities and high-school information may be in-

terpreted separately. The greatest handicap is revealed in number relations, on which the percentile rank is 3. A reading test suitable for college students shows an unusually slow rate of reading, below the first percentile. The Bernreuter Person-

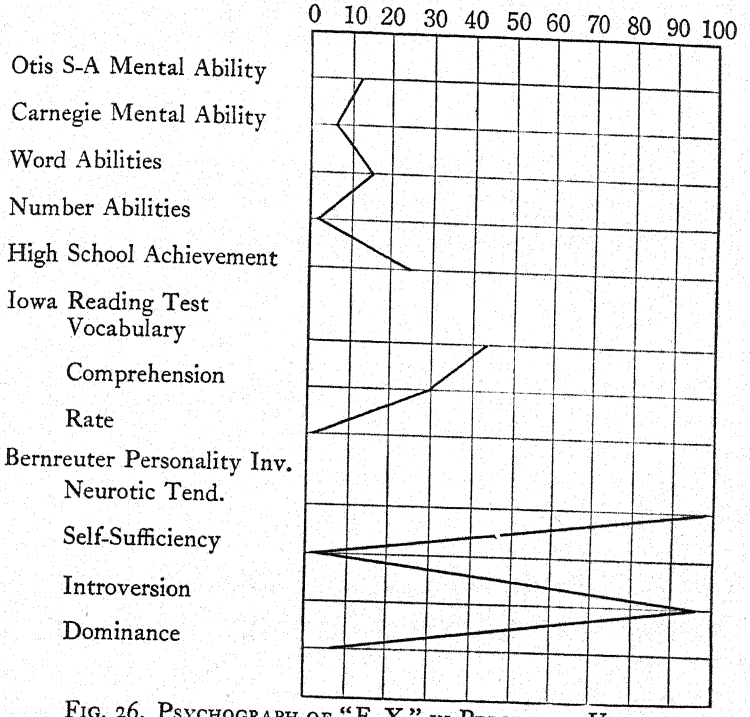

FIG. 26. PSYCHOGRAPH OF "E. Y." IN PERCENTILE UNITS

This trait-profile shows the standing of a college freshman relative to the other members of his group on several ability and achievement tests and on a personality questionnaire.

ality Inventory indicates very high "neurotic tendency" and introversion, with low self-sufficiency and dominance, a typical profile of a maladjusted individual. The psychograph is especially useful in presenting psychological measures in a way that permits ready comparison of scores on various tests. A total picture of the individual's traits is more readily gained by the use of this method.

In addition to yielding quantitative measures of some of the individual's traits, the psychological examination provides an

opportunity to observe him at work and to note many unmeasured characteristics of his behavior. The psychologist frequently finds that the informal observations made during the examination are of greater value than the test results themselves. Skillful observation will often show why a child fails a given test, which is more significant than the bare fact of failing it. Habits of work and reactions to frustration may be estimated by seeing how the individual meets the test difficulties. Some tests may be used, in fact, which give only qualitative results. The mirror-drawing test, in which the subject is required to trace a design that he can see only reversed in a mirror, has no numerical interpretation, but is valuable in determining whether the subject will persevere, give up, show anger or appeal for assistance in this unfamiliar task. It is usual for the psychologist to include in the report a description of the subject's test behavior in general and estimates of his activity, attention, willingness to please, effort, speed and accuracy, as seen in the test situations. Much of the justified criticism that has been made of psychological tests is due to the isolated interpretation of test scores. This error may be avoided by considering the psychological measures in relation to the whole personality of the individual.

The Interview. The direct psychiatric or psychological interview with the patient is the most significant of all of the procedures employed in the mental hygiene case study. Only from the individual himself can be obtained an understanding of his motives, attitudes, emotional trends, attachments, adjustments and degree of integration. Interviews are both *diagnostic* and *remedial*, in that they serve to determine the nature of the patient's difficulties and also to assist him in correcting them. The diagnostic and remedial functions are inseparable in practice. The interviewer continues to gain insight into the patient's condition all through the process of treatment. Only for purposes of description can these two functions be considered apart. The diagnostic aspect will be considered first.

The aim of the diagnostic interview is to get the subject to reveal the significant facts about his personality and his adjust-

ments. This is hindered by a number of factors to which the psychoanalytic term *resistances* may be applied. The simplest type of resistance consists of diffidence toward the interviewer and lack of confidence in him, which must be overcome at the beginning of the interviews. Another relatively simple resistance is caused by feelings of guilt, shame and social disapproval with which the subject regards the behavior being investigated. A more serious resistance is found when repression has caused the forgetting of experiences that were important in the development of the maladjustment. A still more difficult resistance to overcome is lack of insight. In many cases the subject is unable to tell his history clearly because he has never understood the sources or significance of his behavior, since it was acquired by entirely blind trial and error learning. A lack of integration also hinders the direct examination, for this condition prevents the subject from seeing his problem as a whole and from discriminating the significant aspects of it.

The first task of the interviewer is to establish *rapport* with the subject, which serves to weaken his various resistances. Rapport implies a condition of confidence, trust and friendship, and the creation of a positive emotional response on the part of the subject toward the examiner. This consideration is of such paramount importance that the first interview or even several interviews may be spent solely in establishing rapport. All procedures of a well-conducted interview should assist rapport, but at the outset some special devices are often useful. The interviewer should know something in advance about the characteristics of the subject, and may begin by asking him about matters in which he is interested or proficient, rather than to bring up at once painful topics relating to the adjustment problem. The interviewer should show that he is interested in and knows about the things that the subject values. This will give him the status of a collaborator. A species of "identification" assists in beginning an interview, which may be accomplished by referring to friends and experiences that the interviewer and subject have in common. A little flattery or humor is not out of place in getting the subject into a suitable mood.

The personal characteristics of the interviewer are very important both in the process of establishing rapport and in the subsequent procedures. The interviewer must be a well-adjusted person himself, in order to avoid making personal emotional reactions to various aspects of the subject's experiences. The interviewer should not give obvious praise or condemnation of the conduct of his patient, nor show surprise or disgust at any disclosure. The interviewer must secure the respect of the subject without overawing him. He must be friendly, cordial and genuinely interested in the individual and his problems. It is necessary to have the patience to listen to a long-drawn-out tale of woe without restlessness or boredom. The qualities that make an efficient interviewer are so fundamental that persons have to be selected for this task as well as trained for it.

The opinion of most experienced workers, and also a number of experimental findings, favor letting the patient tell his own story first, with as few questions and comments as possible. A free unguided narrative expresses more ideas, and is less likely to contain errors than are the answers to direct questions. The interviewer may encourage the subject over difficulties with reassurances and with such comments as "Isn't that interesting!" or "And then what did you do?" The free narrative approach adds to rapport, for, having told his story, the subject feels that the interviewer is an "insider" and has less resistance to direct questions than if these had been asked at the outset. In listening to the subject's story, the interviewer is alert to catch many significant indications of areas of maladjustment that are not revealed by the story's obvious content. Any part of the narrative to which the subject reacts emotionally or at which he shows a reluctance to proceed, is likely to be important. Topics on which the subject seems to rationalize or to defend his own conduct too warmly indicate sore spots in his adjustive attitudes and warrant further investigation. The discovery of the situations that are emotional stimuli for the individual is of as much value for the mental hygiene study as is the tabulation of the objective facts of his past experiences.

Direct questioning is possible after the subject's confidence

has been gained securely. The questions arise from the issues suggested by the case history and the free narrative, or are formulated by the interviewer according to his knowledge of the problems involved. If the patient seems to be withholding segments of information likely to be significant, questioning may be directed toward such matters, often by a round-about route that will make the approach easier. Common precipitating causes of maladjustment such as family circumstances, social relationships, economic troubles and love and sex relationships are thoroughly canvassed. Predisposing factors, including childhood emotional experiences, the development of independence, and the subject's attitudes toward his parents, are explored as fully as possible. A successful study of personality cannot be done in a hurry. The best clinical practice, unless prevented by considerations of expense, allows the subject to take his own time. Dependence is placed on the development of rapport that will eventually permit the subject to make a full disclosure, rather than on persistent or harassing questioning.

Only the most general characteristics of the interview have been described. This is an unavoidable circumstance, for the procedure must be adapted to the patient and his problems. The interview used in a case of phobia is necessarily somewhat different from that appropriate for an individual who displays overaggressive compensatory behavior. Of all clinical procedures, the interview is the one whose value depends most on flexibility.

Modified Interview Techniques. When the subject is unable to give a clear account of his behavior because of repression, lack of insight or poor integration, certain modifications of the interview techniques will sometimes serve to elicit information upon which treatment can be based. These methods have been developed chiefly by the psychoanalysts and several of them have been described briefly in Chapter XIV. The practical worker may use these devices for what they are worth, however, without troubling himself about the psychoanalytical theories. Originally designed to "probe the unconscious," the values of the modified interview techniques may be explained at least in

part by objective psychology without reference to the hypothetical structures of psychoanalysis.

One psychoanalytic method that is applicable to the study of personality is *uncontrolled free association.* The patient is directed to lie on a couch, close his eyes and relax as much as possible. He then starts with some memory, experience or emotional attitude relating to his maladjustment and rambles verbally, saying aloud any association or recall that occurs to him. He is instructed that nothing is to be withheld, no matter how petty or irrelevant, or how painful or shameful it may be. The interviewer usually listens in silence, but occasionally may encourage, direct or question the subject. The effect of relaxation on freedom of recall is obscure physiologically, but is a well-attested fact. It is possible that the muscular inhibitions ordinarily exercised when in a state of attention are released by relaxation, and that this effect spreads in some manner, causing a weakening of inhibitions of recall. In the relaxed or disinhibited condition, the subject may remember experiences and reinstate attitudes that are impossible for him under normal conditions of alertness. A similar phenomenon occurs when drowsy and just before falling asleep, and may be utilized to aid recall. The use of this technique without the presence of an interviewer is possible with some intelligent and co-operative subjects. The phobia of Mildred K. (p. 203), described in an earlier chapter, was investigated by this device. The young woman was instructed in the method and left to carry it out alone. This variation will not be successful in most cases, for the guidance of an experienced practitioner is usually needed.

Another method sometimes used for the discovery of the problems to which an individual is reacting nonadjustively is *dream study.* As was explained in Chapter III, many dreams are concerned with an individual's problems, conflicts and unfulfilled aspirations. In dreaming, an individual either ruminates on the events of the immediate past or engages in symbolic trial and error on the problems that concern him. Dreaming is essentially of the same form as daytime revery and is a process of thinking. In dreams the thinking is often done by the ma-

nipulation of substitute responses or symbols, but no mystery need be attached to this fact. All ordinary thinking is done with symbols, such as words, gestures, images and postures. In the dissociated state of sleep, some very remote and obscure symbols may be used. Dreams cannot be interpreted without other knowledge of the personality and experiences of the dreamer, but sometimes serve as a helpful starting point for exploring the reactions underlying a maladjustment. The first step in this use of dream study is to effect the recall of some dreams, which are usually forgotten on awaking. One device is to write a brief synopsis of the dream immediately on waking and while still drowsy. Another method is to lie in bed with the eyes closed and verbally repeat the substance of the dream, the words being remembered better than are the fleeting images that constitute the dream content itself. Dreams are remembered in the relaxed state of the free association procedure that are not recalled when alert and active. Dream interpretation cannot be done by any fixed interpretation of the symbols. By free association and by responses to questions, the subject himself unravels the meaning of the dream under the guidance of the interviewer. As facts, dream interpretations must be regarded very skeptically, in the light of the experimental evidence that indicates the unreliability of reminiscences as testimony. As indicators of the attitudes, emotional sets and adjustment problems of the individual, dreams may have considerable value.

The free association and dream study methods are most useful in overcoming the stronger resistances of adults. Mature persons can state their problems in verbal form and, on the average, have enough intelligence and experience to make the application of these direct methods worth while. Children, on the other hand, can seldom verbalize their attitudes and difficulties. This fact has led workers to rely more on the external case history and on observation than on the reports of the child. Two techniques may be mentioned that are analogous to the modified interview methods just described and which have proved to be of value in some cases of childhood maladjustment.

One method is the *phantasy* approach. After a cordial rapport has been established the child is induced to make up a story, often starting from a picture, a fairy tale or some aspect of play. Children's phantasies, like the dreams and daydreams of older persons, are likely to reveal their motivations, beliefs, attitudes and trends of personality. The child himself is usually the faintly disguised central figure of his imaginative story, and the characters and influences of his environment are also pictured in it. The child's typical responses to his parents, playmates and school life, and his attachments, his degree of security, and his dependence may be revealed. The phantasy technique is far from being an exact one, but may suggest areas for further investigation when guided by a skilled interviewer. Some children will not verbalize even enough to make a phantasy. The technique of *play observation* may then yield suggestive indications. The child is provided with toys such as blocks, hammer and pegs, toy vehicles and other materials suited to his age. An observer in good rapport with the child may note the directions of his aggressiveness, his dependence, his curiosity and his inhibitions, by observing his play and the remarks that he makes while busy at it. This method will not produce results of any significance in many cases, but interesting results have been recorded in some instances. The play method may be used only to gain rapport, or it may open the way to a discussion of problems that at the outset the child will not express in any other way.

The diagnostic aims of all interview techniques are to get a complete history of the individual, and to determine his persistent habits of behavior, of thought and of emotional response. The more devious modifications of the interview are simply methods for overcoming the resistances due to shame, repression and lack of insight. They serve to open the way to direct questioning and to the other simpler interview methods which are fundamental. The remedial aims of the interview and the treatments that are given through its use are a matter for separate consideration and will occupy a part of the next chapter.

SUGGESTED READINGS

The origin and history of the mental hygiene movement are reported in Beers, *A Mind That Found Itself*, and in Cross, *Twenty-five Years After*.

The organization and methods of mental hygiene clinics are described in Stevenson and Smith, *Child Guidance Clinics*, and Lowrey and Smith, *The Institute for Child Guidance*. The National Committee for Mental Hygiene's *Directory of Psychiatric Clinics in the United States* gives information concerning the facilities available.

Cases illustrating the techniques of study and treatment used by clinics may be found in Sayles, *Child Guidance Cases*; and Healy and Bronner, *Judge Baker Foundation Case Studies*. Shorter case descriptions are given in practically all of the references cited throughout this book.

Psychological testing in a clinic is described by Wells, *Mental Tests in Clinical Practice*. Other references on mental tests are Garrett and Schneck, *Psychological Tests, Methods and Results*; and Hildreth, *Psychological Service for School Problems*.

A critical survey of the interview, free association, and other diagnostic methods used in clinical study is made by Symonds, *Diagnosing Personality and Conduct*, chaps. 10, 12, 13. A helpful practical discussion is Bingham and Moore, *How to Interview*, chaps. 7, 8, and 9.

CHAPTER XVI

THE GUIDANCE OF READJUSTMENT

CAUSES AND TREATMENT

The Hypothesis of Causes. The sequence of procedures employed in the solution of a problem of mental hygiene may be compared to the steps of the scientific method. Each individual represents an experiment, and therefore requires the collection of data, the formation of hypotheses, the drawing of conclusions, and their practical application. The data concerning the individual are gathered by the methods of case study described in the preceding chapter. The next step in the treatment of a maladjusted person is the formation of hypotheses concerning the significant antecedents, or causes, of the behavior that is to be modified. The remedy of any undesirable social or biological condition is most effective when the causes of the difficulty are understood. In the realm of general medicine, the physician can give specific treatment only when the causes of a disease are known. When the causes are undiscovered he can do no more than make his patient comfortable and build up his strength to assist the self-curative processes of the body. Although the causes of behavior problems are less well understood than are the origins of many physical disorders, useful methods of attack exist by which hypotheses may be formulated.

First, the psychology of adjustment offers a general hypothesis concerning the origin of problems of conduct, the application of which is valuable in practically all cases. Maladjustments arise as inadequate responses to the frustration of an individual's motives. This thwarting is due, in general, to an imbalance between the environmental difficulties encountered and the individual's ability to meet them, as determined by his capacities and by his habits of personality. Subsidiary to this broad generalization are a fund of hypotheses concerning human motives, methods of learning, traits of personality and typical

modes of reaction to difficulties. In short, the entire theory of the psychology of adjustment that has been developed throughout this book constitutes a conception of the causes of aberrations of behavior.

In the treatment of a particular case, however, more detailed hypotheses of causes are essential. To understand the behavior of one individual it is necessary to know the nature of *his* motives, frustrations and satisfactions, which is a far more complex task than to understand the operation of these factors in mankind at large. A behavior problem is rarely the result of a single experience or thwarting. Everything that has happened to the individual that has molded his personality or governed his opportunities has contributed some share. Maladjustments are the result of a *multiple causation*, a pyramiding of destructive influences in the past formation of personality and in the present environmental situation. Manifestly, it is impossible to discover every one of these many causal factors or to remedy all of their detailed consequences. Practitioners of mental hygiene must select the causes that seem most pronounced in their effects and which seem most amenable to treatment. This selection is performed by evaluating and interpreting the data of the case study.

An error to be avoided in the care of maladjustments is that of treating the symptoms rather than the causes. Children and adolescents have already been submitted to symptomatic treatment before they come to the attention of the psychological practitioner. Parents and teachers have a natural tendency to make a direct attack on the behavior that is most annoying. Overaggressive conduct has been met with threats and punishments, withdrawing with exhortation to enter into group activities, and fears with "appeals to reason." These devices will sometimes result in the alteration of the particular behavior at which they are aimed, but often at the expense of forcing the development of an even more undesirable type of maladjustment. In general, competent practitioners and clinics avoid merely symptomatic remedies. A few exceptions to this rule may be noted, however. If the maladjustment is a very

mild one, it may not warrant a thorough clinical study. Such a problem may yield to a simple treatment directly aimed at the present difficulties only. This treatment is always based on the general psychological theories of the causation of maladjustments and is therefore superior to the methods popularly used, but may not go deeply into the history of the individual or his present attitudes. In other instances it may be desirable to effect a quick improvement of some outstanding symptom of maladjustment in order to win the confidence of the patient or of his parents, even though the method may be superficial. After the initial relief is obtained the rest of the study and treatment may proceed along more basic lines and aim toward more permanent results.

Methods of Evaluating Adjustments. A number of practical methods have been devised for analyzing and evaluating the adjustments of individuals, in keeping with the theories of the psychology of adjustment. Three methods suitable for this purpose will be described. These approaches are not alternative methods of attack, but are highly supplementary. No one of them is sufficient, but a combination of all three will give considerable insight into the mechanisms of the individual's conduct.

A simple but extremely useful initial approach to the evaluation of adjustments is the *situation-response* method of analysis. In this attack, the practitioner attempts to define exactly what situations evoke the undesirable behavior and exactly what responses are made. If aggressive behavior, for example, is the principal symptom, the areas of aggressiveness must be distinguished precisely. Some individuals may show this attitude toward persons in authority but not toward their equals, toward parents but not toward teachers or *vice versa*, or toward one parent and not toward the other. The statement of the limits of the stimuli that call forth the undesirable behavior will often throw light on the causes of the condition. In cases involving worry or anxiety, the definition of the situation in which it is aroused may indicate to what the individual is reacting nonadjustively. Hysterical symptoms often appear in

some situations but not in others, and a careful study of their nature and history often discloses their relationship to the individual's adjustive problems. The situation-response approach pays the largest share of attention to the present behavior of the individual. This is justified by the fact that a maladjustment is always an inadequate response to present difficulties. The method does not overlook the remote factors that make the individual behave as he does, however. A knowledge of the exact stimuli that arouse undesirable behavior leads to an investigation into the history of the individual's experiences with these situations and hence into the origin of his mode of reaction to them.

Another method for evaluating adjustments is the *motive-satisfaction* analysis. This formulation emphasizes the purposive nature of all adjustive behavior. The symptomatic behavior of a maladjustment constitutes a means toward an end, which is tension-reduction through the completion of motivated activity. In a popular phrase, the individual "gets something out of" his symptoms; they serve as substitute satisfactions for motives the fulfillment of which has been prevented. By understanding the individual's motives and by detecting how his behavior contributes to their satisfaction, plans may be formulated for the guidance of readjustment. One approach to the study of motives is through general psychological theories which enumerate the uniform or dependable motives of mankind and which account for the origins of these tendencies. A useful attack in many cases is to make an inventory of the ways in which the individual is achieving the satisfaction of his motives of mastery, social approval, security, love and sex. Since the motives designated by these categories are so universal, so strong and so subject to frustration, they will be found to underlie a large proportion of problems of adjustment.

These forms of motivation are not "instincts" or invariable modes of response, however, but are developed through learning processes, as was described in Chapter IV. Their frequency of occurrence is due more to the fact that most individuals have had very similar experiences, than to any native factors in

human nature. Learned behavior is inevitably somewhat variable, and the motive-patterns of any one individual may deviate considerably from the typical. One person may have a much greater need for love, for protection or for self-assertion than another, because of his particular set of formative experiences. Motives also differ in various periods of life, those of the infant, the child, the adolescent and the adult having characteristics peculiar to the demands and abilities of each stage. Many maladjustments are traceable to the continuation of a kind or degree of motivation into a time of life for which it is inappropriate. A child whose training has prevented the development of independent problem-solving habits or who is excessively fondled and overprotected will carry an infantile need for attention and approval and a need to depend on others into situations in which these retarded motives cannot be attained. Because of emotional maldevelopment a childish kind of mastery behavior may persist, preventing the satisfaction of this motive by real achievement on a more mature level. These considerations emphasize the importance of a careful evaluation of the particular motives of the individual. His adjustive difficulties may not be due to an impossibility of achieving the reduction of mature and ordinary motives in his present situation, but to his excessive and unattainable demands for certain special satisfactions. The motivation of the individual, which is one aspect of his personality, is therefore the factor needing redirection. This may be accomplished through retraining since the warped motives are themselves the result of undesirable learning processes. In the practical application of these principles to the evaluation of the adjustments of an individual, the following questions should be raised. What needs or motives are satisfied by his behavior? To what degree is the seeking of substitute satisfactions due to unjustified present environmental difficulties, or to his personal inability to achieve normal motives by more usual methods? To what degree is this occasioned by excessive needs for certain kinds of satisfaction? How did this misdirection of motivation arise? What factors in the environment or in the personality of the individual can be

redirected to reconcile the discrepancies between needs, abilities and opportunities?[1]

A third method by which adjustments may be evaluated is the *asset-liability* analysis, a recent contribution by Howard and Patry (1935). When using this approach, a chart or table is constructed which enumerates the assets or desirable qualities of the individual and of his environment, and the liabilities or handicaps, both personal and circumstantial. Liabilities are divided into two classes, those that are modifiable by available means, and those considered unmodifiable either because of their nature or because of their inaccessibility to treatment. Assets and liabilities are tabulated in each of the principal spheres of case study, including family, home, neighborhood and school influences, and the physical characteristics, mental abilities, personality traits, developmental progress, and habitual adjustments of the individual. Assets may include such facts as good mental ability, social interests, desirable personality traits, co-operative parents, neighborhood recreational facilities and many other constructive elements. These are to be utilized in bringing about readjustment. Modifiable liabilities are illustrated by many undesirable traits of personality, home faults such as quarrelsomeness, lack of security or overprotection, and school maladjustments such as grade misplacement, wrong methods of discipline or lack of motivation. Among the relatively unmodifiable liabilities are serious physical defects, mental dullness, strongly entrenched family habits and poor economic circumstances. Some of these liabilities are unmodifiable by any method, others are considered so merely

[1] What is essentially a *motive-satisfaction* method of analysis has been developed by psychiatrists and psychiatric social workers, chiefly at the New York School of Social Work, under the name of the "*ego-libido method.*" (Lee and Kenworthy, 1929.) This approach evaluates adjustments in terms of two principal types of motives, the "ego-needs" which are tendencies to self-protection, self-assertion and self-esteem, and the "libido-needs" for love, protection, approval and security. Special attention is paid to the modification of these needs as the individual matures, and to arrests of progress due to emotional maldevelopment. This method has become well known to clinicians and social workers, and has proved to be a useful tool in practice. The present writer feels that the division of motives into two groups is too narrow. While this approach is not really psychoanalytic in theory, it is unfortunately encumbered with the psychoanalytic terms by which it is designated.

because they are beyond the scope of treatment by clinics, psychologists or other mental hygiene agencies. The method of attack on irremediable defects is to assist the subject to accept them unemotionally, to guide him into constructive compensations, and to adapt circumstances so that they are less annoying. Howard and Patry regard maladjustment as a lack of balance between assets and liabilities. The object of the analysis is to present a complete and integrated picture of the individual's personality and his opportunities, to serve as a guide for restoring this equilibrium. A further elaboration of the method is the "Fourfold Individual Analysis Chart" which in addition to assets and liabilities states the individual's *needs* and what *activities promoting needs* can be supplied in order to effect readjustment.

The object of all three of the methods of analysis described is to assist in understanding the individual, in interpreting the case study data and in formulating plans for the reconstruction of his behavior. If any method for evaluating personality is allowed to degenerate into a routine procedure of "filling in a blank," it loses its value. Only when the system of evaluation stimulates constructive thinking about the individual does it fulfill its purpose.

Basic Procedures in Mental Hygiene. When the case study data have been assembled and the individual's adjustments analyzed and evaluated, a *diagnosis* may be made. A mental hygiene diagnosis differs considerably from the familiar type of medical diagnosis that can be stated in a word or two. The diagnosis of a maladjustment is a condensed statement of the practitioner's conception of the remote and immediate causes of the condition, the nature of the mechanisms shown and the most likely course of treatment. The case citations given in the preceding chapters are little more than diagnoses, being brief summaries of the most pertinent facts of the problem shown. In clinics the diagnosis is usually made at a staff conference. Psychiatrist, psychologist, social workers and other specialists each contribute their findings, which they are better able to interpret in the light of the information provided by the

others. From the integration of all of the data gathered from varied points of view, a tentative conception of the problem as a whole can be obtained.

Diagnosis is not the labeling of the individual or of his problem. The terms applied to the varieties of adjustive behavior are freely used as concepts, but do not constitute diagnoses in themselves. The value of such designations as "compensation," "negativism," "compulsion" or "hysteria" is that they serve in the place of long descriptions of these forms of response. Since each may arise from a variety of causes, and require correspondingly different forms of treatment, they tell only a small part of the entire story. The diagnosis includes statements of the aims of treatment, the procedures to be employed, by whom it is to be done, and an estimate of the prospect of success. Once made, a diagnosis is not considered final or complete but is constantly revised, in such degree as may be necessary, as more information is discovered in the course of treatment. The formal sequence of study, diagnosis and treatment is followed to some extent, but it is recognized that much significant information may be uncovered only in the later states when firm rapport has been established between the subject and the practitioner.

The treatment of maladjustments presents two fundamental tasks. One is to remove or remedy the particular inadequate behavior that is the evident cause for seeking clinical assistance. This must be accomplished, of course, not by treating the symptoms, but by redirecting the entire present adjustive scheme of the individual. The second task, which is both more important and more difficult, is to modify the broader characteristics of the individual's personality and to improve his persistent habits of adjustment. In practice, these two tasks are inseparable. They proceed simultaneously and each contributes to the solution of the other. The elimination of the particular symptoms of maladjustment may be effected rather quickly in some cases, although it usually requires sustained effort over a period of time. If the remedy of the underlying personality defects is attempted, the treatment is always a slow

process and may take months and even years to accomplish. Unless this more basic aim is realized, however, especially in more severe cases, the individual is likely to lapse into a maladjustment of his old type or of some other variety when he again meets some perplexity or frustration.

It is very difficult to make valid general statements about the treatment of maladjustments, for each case presents peculiarities of its own and requires the use of procedures especially adapted to its particular needs. It is obvious that the course of treatment for a case of aggressive compensatory behavior would be very different from that suitable for a phobia, and this again different from that employed for hysteria. A number of techniques of treatment that are usually applicable to the several types of maladjustment have already been described in the chapters on varieties of adjustive behavior and have been illustrated in the case studies cited. Even the prescription of treatment for a given kind of maladjustment is too great a simplification, however. A state of hysteria, for example, may arise from many different particular causes, and may occur in persons of varied habits and abilities who have backgrounds and opportunities of great diversity. Because of these considerations, the same methods of treatment will not work for all persons even when the same general patterns of disorder are shown. Another difficulty involved in this topic is that treatment may be given with various degrees of intensity and thoroughness, ranging from simple advice to a profound and lengthy attempt to remould a personality.

A number of the basic methods used in the treatment of maladjustments may be described, without making any futile attempt to specify the exact procedure to be used for the cure of various kinds of behavior or personality. The most generally applicable technique of treatment is *psychotherapy*, which is performed by interviews with the person under care. Most of the work of removing symptoms and of improving traits of personality is done by this method, which is the major device for treatment in the field of psychological disorders. Other methods, which are carried out by means other than

direct contact with the patient, are sometimes lumped together as "external" therapy, but are ultimately concerned with the modification of the individual's responses, which is the fundamental aim of all mental hygiene procedures. Three principal varieties of relatively external treatment may be distinguished. One such method is to modify the individual's environment so as to make it easier for him to adjust. Common means for accomplishing this end include a change of home for longer or shorter periods of time, change of occupation, adjustment of school grade or curriculum, and many others. Another external method is the arrangement of environmental factors to provide opportunities for re-educating the individual and for stimulating him to try new means of adjustment. This may be done through recreational agencies, occupations, schools, by the guidance of routine habits at home, and by similar procedures. A third method, which is an indirect one in relation to the individual being treated, consists of giving direct treatment to other persons who control him or who determine his environment. In fact, the remedy of the maladjustments and personality defects of parents by direct psychotherapy is probably the most important part of the treatment of many behavior problems of their children. The next sections will contain a brief description of some of the more usual approaches to both direct and external treatment, and will attempt to explain the merit of these methods in terms of the psychology of adjustment.

DIRECT TREATMENT — PSYCHOTHERAPY

Expressive Methods. One of the first steps in mental hygiene treatment is to induce the patient to make a full statement of his difficulties, to tell his own story with as few interruptions and suggestions as possible. In addition to the diagnostic value described in the last chapter, this has considerable worth as a remedial procedure. Patients almost universally report a feeling of relief after having told of their troubles. This method is not a discovery of modern psychology, but has been advo-

cated and used for centuries. It is commonly recognized that talking about a personal difficulty tends to reduce its intensity. Popular speech has formulated this principle in many ways, ranging from the assertion that "confession is good for the soul," to the slang advice to "get it off your chest." The Catholic Church has used expressive psychotherapy in the confessional, and it also appears in many less formal relationships between an individual and his physician, clergyman, parents or friends. If the clinician [2] were to do nothing more than to listen to the patient's voluntary account, the curative effect would be superficial and not more valuable than that resulting from the same confession made to a friend who has no training in psychology. The trained worker in mental hygiene has an advantage, however. With his knowledge of the special techniques of interviewing and his skill in using them, the clinician may lead the patient to disclose segments of his experiences that would not be revealed to persons met in the ordinary course of life, because of shame or other forms of inhibition. As the interviews proceed the patient's resistances are removed, resulting in a statement that is more free and more complete. The important materials thus discovered are added to the content of the confession, increasing its therapeutic value. The patient, under the guidance of the clinician, may become clearly aware of some of his own attitudes into which he formerly lacked insight because they were acquired by blind trial and error learning. In the end, therefore, he may tell more about himself and his adjustments than he knew at the time that treatment was begun.

The expressive method in psychotherapy is usually called *catharsis*, which term is derived from a Greek word meaning "to purify." The very word "catharsis" indicates the naïve and animistic theory by which the curative effect of expression was formerly explained. It is still popularly supposed that by confession the individual gets certain obnoxious elements of thought

[2] In this section the term *clinician* will be used to mean psychiatrist, physician, psychologist or psychiatric social worker, any one of which may employ the methods of psychotherapy described.

out of his system, thereby "purifying" it. The early psychoanalytic theory, which regarded catharsis as a process by which detrimental complexes were removed from the unconscious, was influenced by this common belief and in turn succeeded in fixing it even more firmly in popular opinion. A scientific approach easily shows the absurdity of this explanation. In talking, the individual does not excrete or eliminate anything. The analogy which compares speech with the physiological processes by which poisons may be eliminated from the body is a far-fetched one. Talk and recall are responses to stimuli, and must be considered as such by any correct theory.

A rational understanding of why catharsis is of curative value may be obtained from a concept developed in connection with the conditioned reaction. Catharsis is very largely an application of the principle of *experimental extinction*. In the conditioned reaction experiments, the dog learns to salivate when the bell is rung. After this habit has been acquired, if the bell is rung repeatedly without being accompanied by the adequate stimulus of the food, the dog's response to it becomes weaker and at length disappears. In effect, the dog has been "cured" of responding to the bell by repeated unreinforced stimulation. In exactly the same way, conditioned fears are eliminated by exposing the subject to the fear-producing stimulus under reassuring circumstances. Maladjustments in general spring from emotional tensions that are responses to some factor in the life of the individual. These tensions lead either to defense mechanisms or to persistent nonadjustive responses such as anxiety or nervousness. The discovery of the causal stimuli and their verbal repetition serve to extinguish or uncondition the undesirable response. Although catharsis operates chiefly through experimental extinction, this is not the only value of the method. In the process of telling of his difficulties the patient often makes an adequate emotional response that previously has been inhibited. He openly represents his fears, shames, motives and attachments. The process of expression is therefore tension-reducing, as all responses to emotional stimuli are in some

degree. This aspect of expressive therapy is often designated as the *release* method. It is of special value in relation to repressed and otherwise inhibited parts of the individual's experience that are revealed only under the guidance of the clinician. A third constructive effect of catharsis lies in the assistance that it gives to the patient's *integration*. By giving a sequential account of his experiences, he is prepared to comprehend them as a whole and to evaluate them objectively, which are further aims of psychotherapy.

Many adjustive problems are assisted by *repeated catharsis*. In this procedure, the patient is made to tell his own story not just once but again and again. The clinical interviews may be conducted by having the patient begin his story anew and retell it, adding such new facts as he can recall, but chiefly repeating what he has told before. This method is justified by the need for repetition in extinguishing a conditioned response. Complete extinction is achieved only by continued repetition of the unreinforced stimulus over a period of time. The procedure of repeated catharsis is employed not primarily for the information that it may yield but for the effect that it has on the patient. Each repetition makes the situations that he describes seem more familiar and hence less mysterious, fearsome or hopeless.

The attitude of the clinician is one of the most important variables determining the success of expressive therapy. In the first place, a high degree of rapport with the practitioner is necessary before the patient will disclose material of which he is ashamed, and before repressed or unintegrated experiences can be reinstated. In a purely cathartic approach, the clinician maintains an entirely detached and objective attitude. Not only does he refrain from reproving the patient, but he also reserves commendation. Above all, he does not give advice at this stage of the proceedings. Dependence is placed entirely on the self-initiated activity of the patient with the assurance that the reconditioning and the insight that he gains from his own disclosures will effect the desired cure. Some practitioners, especially among the psychoanalysts, are convinced of the exclusive efficacy of this entirely "passive" form of treatment.

Most clinicians, however, combine catharsis with other techniques.

Explanation and Assimilation. One of the general characteristics of maladjustments is a tendency for the individual affected to respond to certain of his own characteristics, to certain situations, and to some other persons, with emotional rather than rational behavior. He does so because of habits acquired in the process of personality formation. The corresponding aim of treatment is to change the individual's responses to such stimuli so that they are no longer of the disorganized emotional type, but are constructive problem-solving attacks. Since catharsis operates to extinguish conditioned emotional reactions, it is of some service in assisting the achievement of this end. More active measures are often necessary, however, which require the clinician to emerge from his rôle as a listener and to take positive steps to secure the desired results. Methods somewhat more active than catharsis by which emotional reactions are modified include a valuable procedure variously known as *assimilation* or *desensitization*. The patient is said to assimilate the stimulus as something familiar, acceptable to his concepts of social and individual values, and to be regarded calmly and with equanimity. He is rendered no longer peculiarly sensitive to it as an emotional stimulus.

One method for promoting assimilation is to explain to the patient the origin of the behavior tendencies that constitute his maladjustment. Ideally, this explanation is given when the patient's own questions demand it, rather than as a lecture to which he is compelled to listen. Care must be taken not to make an interpretation of the case too soon, however. The first question asked in the initial interview by many subjects is for a complete and authoritative explanation of their conditions. This request should be parried, and interpretation postponed until the patient is ready to receive it. Even after the clinician feels that he understands the causes of a maladjustment, the patient may not yet be prepared. It is necessary for the patient to have discovered the facts of his own case and to have gained the insight and tolerance that result from the expressive meth-

ods of therapy. Too precipitate an explanation may cause antagonism and a loss of rapport, if the patient still reacts emotionally to his situation. In other cases, the patient may accept the explanation intellectually, but be prevented from applying its implications because of persisting emotional tendencies. The interpretation of a case is often given little by little as the subject becomes prepared to face its various aspects.

As a curative procedure, explanation is of value only when it makes the patient understand that his behavior is the result of natural and inevitable causes arising from his past experiences. When he has made this discovery, the patient is aided in the reduction of such emotional reactions as may have remained, and is able to formulate more objective plans for readjustment. The explanation made to the patient may be in terms of the theories of the psychology of adjustment, particularized to fit his own case. The essentials of the objective psychological approach are not very difficult to understand and may be grasped by all but the most stupid or young patients. The terminology must be fitted to the understanding of the individual, but the concepts of motivation, of tension reduction by means of defenses, of learning directed by motives and opportunities, and of persistent nonadjustive reactions can be taught. With intelligent persons it is often profitable to give what amounts to a brief and individual course of instruction in the nature of personality adjustments.

It would be gratifying if only a correct theory would provide the insight needed for assimilation, but this, unfortunately, is not the case. Methods of explanation that are fundamentally unsound may still have some value for the achievement of therapeutic aims. The psychoanalytic theory, although contrary to many established experimental principles of psychology, was devised for clinical use and may work very well in some instances. If the patient can be persuaded that his difficulties are due to remote sexual problems relating to his infancy, he can assume a less emotional attitude toward his present characteristics and frustrations which may be the real causes of his maladjustment. The efficacy of inferior methods of interpre-

tation suggests that what is needed for the relief of maladjustments is an acceptable rationalization rather than a completely correct explanation. The essential aim is to enable the individual to substitute an intelligent response to his difficulties for his previous inadequate emotional attitude. If a harmless kind of rationalization is substituted for a more disorganized type of defense or nonadjustment, a therapeutic advantage may be gained, the means being justified by the end. A second observation which arises from the fact that many different forms of explanation may work in practice, is that experimental rather than clinical evidence must be made the foundation of a theory. No theory is proved merely because it assists in therapy. The successes of such utterly contradictory theories as psychoanalysis and Christian Science indicate this, for both cannot possibly be true. The lack of relationship between theoretical validity and practical utility probably accounts for the disregard that many clinicians have for consistency of theory.

Advice and Suggestion. The clinician may take a still more active rôle in treatment by giving advice and suggestions to the patient for the guidance of his readjustment. It is recognized, however, that direct and authoritative advice is a procedure of very limited utility. If the course of action recommended thwarts the patient's cherished substitute satisfactions, he may react with antagonism and self-defense. Indeed, the patient often knows what he ought to do before coming for consultation, but is prevented from carrying out his intentions because of fixed emotional habits. Mere advice, no matter how wise or well-founded, does not modify the individual's emotional attitudes or basic behavior patterns, if these have become fixed through long use or through the intense satisfaction that they provide for strong motives.

Because of the futility of advice as a method of therapy in many cases, there is a tendency for clinicians to abandon its use and to place their chief reliance on expression and assimilation. Advice is a useful supplementary method, however, if it is judiciously employed. In some mild cases, where the patient has

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relatively good insight into his condition and is already engaged in trial and error to remedy his difficulties, advice based on the wider experience of the clinician may be all that is necessary. In other instances direct advice may stimulate a patient to try a course of action. Even though at first he does so only half-heartedly and without self-directive motivation, he may gain insight and incentive as he discovers its adjustive value for himself. Advice is most effective in the later stages of treatment when undesirable emotional patterns have already been reduced. It should be given, as far as possible, as a response to a need felt and expressed by the patient. The procedure of giving advice has also been criticized because it makes the patient dependent on the clinician, whereas treatment should be designed to make him capable of solving his own problems. This pitfall may be avoided by using advice only as a temporary crutch, to be removed gradually as the individual becomes more capable of directing his own affairs.

Closely related to advice is the more delicate and subtle procedure of *suggestion*. A suggestion is a partial or incomplete cue or stimulus which is nevertheless effective in producing a response. Hull (1933) differentiates between command and suggestion on the basis of the presence or absence of a self-directive factor. When receiving advice, the subject weighs or evaluates it and makes a deliberative response of some degree which is in turn the stimulus for action. In suggestion, the subject responds to the stimulation directly, without perceiving the source, significance or value of the action to which it leads. Persons vary in the extent to which they will respond to suggestion, but all are susceptible in some degree. Maladjusted persons, especially hysterics, tend to be more suggestible than do those who are well balanced and adjusted.

There is a general conviction that suggestion is a very inferior therapeutic method. This is certainly true of the practice of removing symptoms by suggestion, which was described in Chapter IX as a device sometimes used in the treatment of hysterical mechanisms. If the practitioner suggests that the symptoms will disappear at a certain time, or after taking a

certain medicine or performing some ritual, the result may be temporarily effective. It is inadequate from a far-sighted viewpoint because it leaves the fundamental problem of adjustment untouched. Many techniques employing suggestion may be designated as "repressive therapy," for they prevent the patient from gaining insight into his problem instead of promoting this desirable end. Coué's formula for autosuggestion that "day by day, in every way, I am getting better and better," helped many neurotics for a time, but at the expense of a fundamental understanding of the real bases of the ailments. Christian Science, which denies the reality of illness, is the epitome of a repressive technique. Since expression and insight are the bases of adequate psychotherapy, suggestions that close the way to investigation are worse than merely useless; they are actively antagonistic to the achievement of a real and permanent cure.

Suggestion is inevitable in all close personal relationships such as that between clinician and patient, and is bound to be a factor in treatment, in spite of the objections that have been described. One commonly used suggestive procedure is the giving of reassurance. The conviction that a maladjustment is curable and that the right measures are being taken is absorbed by the patient either from direct suggestion or by his observation of the confident attitude of the clinician. Reassurance is valuable if it is used to build the patient's confidence in himself and to stimulate him to constructive attempts to readjust. The impersonal attitude of the practitioner also assists the patient to take an objective view of his problems, an important aim much aided by suggestion. In later stages of therapy indirect suggestion is often a good substitute for advice, as the patient is less aware of the source and may feel that he has discovered the suggested adjustive procedure for himself. The method of suggestion need not be discarded entirely because it is sometimes misused, but should be fitted into the total scheme of treatment.

Psychotherapy as Re-Education. All of the methods of psychotherapy may be summarized by a single concept — *re-education.*

The various techniques described are designed to accomplish the same end, which is to lead the patient to abandon his habits of conduct that are socially undesirable and individually ineffective, and to substitute other methods for fulfilling his motives. Adjustive mechanisms, either adequate or inadequate, are the result of learning processes, and readjustment is therefore necessarily an act of learning. Much of the obscurity surrounding certain systems of therapy may be dispelled by strict adherence to this basic concept. This does not imply, however, that the guidance of readjustment is a teaching procedure of the kind typically used in schools. Indeed, many attempts made by parents and other unskilled persons to remedy conduct problems fail because they use only exhortation, instruction, example, reward and punishment. These methods are reasonably effective for intellectual education, although many progressive educators have questioned the value of their use even in the school field. A different method of approach is necessary in personality readjustment because of the intensity of the emotional reactions involved, and because of the strength that conduct habits acquire through their constant use in all of the everyday experiences of the individual.

The essentials of adjustive learning have already been described as the existence of a motive, its thwarting, and trial and error behavior leading to some degree of tension reduction. Psychotherapeutic methods operate on these aspects of the learning process in various ways, resulting in improvement. One of the common causal factors found in behavior problems is the maldevelopment of the emotionally derived *motives*. This developmental defect ordinarily occurs by blind trial and error learning in the course of personality formation. Psychotherapy assists in revising the individual's motives by giving him insight into their nature and origins. Catharsis and explanation serve to uncondition emotional reactions that underlie his motives, and to detach the responses that were activated by inferior or immature motives from their typical stimuli. If, for example, the subject is motivated by an overintense fear of social disapproval, improvement is effected by recall of his experiences in

the non-fearful situation of the interview, thereby extinguishing the emotional response that provided the intensity of his motivation. He is also led to perceive clearly and to re-evaluate the training that caused his warped motivation, and hence to reconstruct his aims. Unfortunate motives of the love-conditioned types, such as parental attachments and overdependence, are also benefited by the same procedure.

Psychotherapy also affects the individual's *thwarting*. As has been noted several times before, maladjustments are more usually precipitated by thwarting in the form of personal defect or by conflict of motivated behavior than by environmental obstacles. Many of the most important personal defects are not physical but reside only in the habitual attitudes of the patient. Through psychotherapy he may eliminate excessive sensitivities toward his personal qualities by extinction and assimilation. Attitudes of inferiority, for example, act as frustrations which are always operative because the subject carries them around with him in the form of emotional habits. Emotional detachment may remove thwartings of this type.

Perhaps the greatest value of psychotherapy lies in its influence on the *trial and error* or adjustive attempts of the individual. This curative effect is based principally on the fact that learning with insight is superior to blind trial and error learning, as was stressed in Chapter V. Most maladjustments have come about by blind or so-called "unconscious" modifications of behavior. The individual hits upon some response such as overcompensation, withdrawing, or an hysterical symptom and retains it because it reduces an emotional tension for which he can find no more complete satisfaction. He does not formulate the reasons for his reaction in verbal or intellectual terms, or realize its value to him. Typically, the making of an inadequate or maladjusting response inhibits further trial and error, for having satisfied a drive of exaggerated strength, even by inadequate means, the individual is not likely to seek further. Two of the essential conditions for efficient problem-solving of any sort, adjustive or intellectual, are the systematic tabulation of all of the pertinent facts and evidence, and the formation of a

large number of hypotheses for solution. The insight into his own conduct resulting from catharsis and explanation serves to put the patient into the possession of facts that he did not formerly distinguish with sufficient clarity. From his own account, drawn out by the clinician, he assembles an integrated view of his motives, experiences and past inadequate adjustments. This outlook enables him to try again to solve his personal problems with a greater chance of success than before.

The extinction of strong emotional reactions works toward the same end. An emotional response inhibits constructive trial and error and leads to disorganized and nonadjustive behavior. When the emotional responses have been extinguished by psychotherapy, the individual is able to reconstruct his adjustments in a more rational manner.

Advice and suggestion may be used to help the individual in his adjustive attempts, after he has begun them himself. In some instances these techniques are little needed, for the patient will readjust unaided if inhibiting factors are removed by entirely "passive" psychotherapy. The more active procedures which may stimulate the patient or direct him into desirable trials are often saving of time and are not harmful if the subject is not deprived of freedom or insight by their use.

The contacts with the clinician are in themselves valuable educative experiences. Most human adjustments deal with personal relationships. Maladjustive behavior is more usually called forth by parents, associates or teachers as persons rather than by the home, neighborhood or school as physical environments or social institutions. In the clinician, the patient finds a person to whom he can express his feelings without condemnation and upon whom he can depend temporarily without being subjugated. The clinician, in his position of benevolent authority, comes to stand in the place of the other persons who have failed to provide constructive training in human relationships. When the harmonious attitude which the patient develops toward the clinician can be transferred to the individuals in his usual environment, the desirable training has been achieved. This technique of readjustment by education in

personal relationships has been used successfully even with quite young children in some child guidance clinics. It is not limited to deliberate and specific use, however, but enters into all cases in which psychotherapy is employed.

ENVIRONMENTAL THERAPY

Re-Education Through Environmental Resources. Environmental therapy, like psychotherapy, has as its aim the modification of the adjustive habits of the individual. There is no sharp line of demarcation between the two techniques in practice. The manipulation of the influences bearing on the individual is, by definition, external treatment, but a word addressed to him referring to the changes made might strictly be considered as psychotherapy. In the present description no attempt will be made to distinguish precisely between environmental and direct treatments. By any means that may be available, changes are produced in the social, family, school or physical environments of the individual. These serve to remove any extraordinary frustrations or handicaps that make it impossible for him to adjust normally, and also to guide him into the formation of superior adjustive habits.

One of the most frequently used general methods of environmental therapy is to guide the patient into activities that will provide legitimate satisfactions for his thwarted motives. No cure-all prescription of desirable activities can be made to fit all persons, but the outlets must be selected only after a careful consideration both of the needs of the individual and of his interests and abilities. *Social satisfactions* are generally preferable to solitary ones, for several reasons. Most maladjusted persons are lacking in social contacts, this factor being either a result or a contributing cause of the disorder of behavior. They also tend to be self-centered in motivation and hence unable to co-operate with others toward common ends. The achievement of social adjustment educates the individual to regard his behavior more objectively, and to be satisfied by group accomplishment rather than only by egocentric gain.

To push a maladjusted person into a social group too precipitately is not profitable. If his tendencies are already overaggressive he may prevent adjustment by antagonizing his associates. If withdrawing or fearful behavior has been typical, it may become aggravated by the necessity of having to face a new situation too suddenly. An overprotected and dependent individual may develop devices for exciting sympathy or special consideration from the others. Several techniques have been used for making entrance into group participation easy. One is to start with an activity such as craft or shop work in which individual endeavor is combined with the experience of working with others. Some child guidance clinics have curative workshops which, although they also have other diagnostic and remedial functions, are largely used as a center for initiating group activity. Another useful device is to encourage a friendship between the patient and another person who is well adjusted and who is in good standing with a group. The individual attachment is more easily made at first, and is a step toward full acceptance by the group.

Group adjustment is sometimes prevented by personality traits of such nature or severity as to render the simpler and more usual approaches ineffective. In such cases individual training must precede or accompany entrance into a group. If the patient has a serious lack of self-confidence and security as a result of continued frustration of mastery motives, it is necessary to modify these attitudes in order to prevent either withdrawing or overaggressiveness toward the group. A number of procedures have been found useful in overcoming attitudes of inferiority, but they must be applied with due consideration for the diagnosis of each particular case. For some boys, boxing lessons and coaching in gymnastics or in sports fill this need, if the instruction is carefully arranged to insure success and progress rather than failure. Special skills of many varieties may be cultivated as *asset qualities* that will change the individual's evaluation of his own worth and ability. Hobbies, the design and construction of toys, furniture or clothing, and even music and art may be fostered as personal assets. Precautions must

be taken to prevent these special acquisitions from hindering social adjustment, for in some cases the individual may use his special abilities as a basis for rationalizations to justify remaining "different" or unsocial.

When the individual's need is for social approval, special training is directed to the development of *prestige qualities*. These differ from the assets previously mentioned in being more specifically directed toward the esteem of the group. If the individual can be made skillful in a performance much admired by the members of some desirable group, they will accept him and more readily overlook his shortcomings. The approval bestowed because of a prestige-producing trait reduces the tension of the individual and eliminates the need for antisocial mechanisms. Prestige qualities to be developed have to be selected according to the interests of the group and the abilities of the person being treated. As illustrations the cases may be cited in which a maladjusted boy was trained to throw forward passes and became accepted because of his participation in football, and of a girl whose acquired skill in outdoor cookery won the approbation of a group of girl scouts.

Community resources that may be used for teaching social adjustment vary from place to place, and also, of course, with the age and needs of the individual. Organizations often used for this purpose include clubs of many kinds, church societies, Y.M.C.A.'s and Y.W.C.A.'s, Boy Scout and Girl Scout troops, schools, camps, and community centers. It is important that the leader of a group used for therapeutic purposes have a mental hygiene attitude and sufficient knowledge of psychology to enable him to handle emergencies intelligently and to cooperate with the clinicians guiding the case. The training of such leaders presents one of the greatest needs for mental hygiene education.

A number of procedures for personality training that may or may not involve group participation are also used. A device valuable for many children and adolescents is to get the individual to assume some definite responsibility. Tasks such as household duties, care of a younger child, tending to a garden

or to an automobile, may assist in objectifying attitudes. Care must be taken to select jobs that appeal to individual interests and that do not seem like externally imposed burdens. Further responsibilities of useful types can be discovered in connection with schools, clubs and other groups. Shop and constructive work of any type that requires the individual to plan, concentrate and carry a project through to completion may assist in developing problem-solving abilities. The extent to which attitudes gained in manual work may transfer to situations involving human relationships has sometimes been exaggerated, but this approach is helpful in some cases. In using these techniques, a combination of external and direct therapy is necessary, the provision of environmental opportunities being made along with the explanation and stimulation of the individual's interests.

The Treatment of the Family. The most important environment of any person is his family. The relationships between parents and child are the most significant factors in determining the personality traits of the latter. Among adults the husband-wife relationship is also productive of influences making for good or bad adjustment. Many maladjustments, especially those of children, can be solved only by modifications in the family environment. This often involves the necessity of considering the family rather than the individual as the unit being treated. Psychotherapy directed toward the adjustments of the other members of the family group may be the most valuable kind of environmental treatment for the person originally referred.

The former practice of clinicians in handling a child guidance case was to deal with a parent as an objectively oriented collaborator. If the study of the child's maladjustment revealed that changes in home control were necessary, the parent was informed of the facts and advised as to the exact procedures required. All too often these suggestions were not carried out, and no good was accomplished merely by blaming the failure on the parent's lack of interest, co-operativeness or good sense. The parent is no more to be blamed than is the maladjusted

child. Parents are frequently prevented from changing their habits of handling the child because of their own emotional maladjustments. Children are kept dependent, not from parental ignorance or perversity, but because this dependence satisfies a strong motive in the older person. If a child is neglected, deprived of love, or made to feel insecure, this too arises from emotional attitudes that guide the parent's behavior. Some degree of therapeutic approach to the parent is indicated when such problems exist. The scope of treatment given to parents varies with the need for its use and also with the facilities available for giving it. In some cases a simple discussion of the child's problems, done with tact and psychological understanding rather than authoritatively, is sufficient to revise a parent's attitudes. With other parents, a substantial use of the principal psychotherapeutic techniques, including expression, assimilation and suggestion, is necessary, but the area of discussion is limited to the parent-child relationship, if possible. In still other cases progress can be achieved only by a full clinical study and treatment of the parent, with reference to his or her own development, motives and adjustments. In some child guidance clinics extensive psychotherapy of parents has been practiced successfully by skillful psychiatric social workers under the supervision of the psychiatrist. Because of its demand on the time of the workers, most clinics do not enter into therapeutic relationship with parents unless the needs of the child can be served in no other manner. It is also recognized that an incomplete attempt at psychotherapy for an adult may be worse than none at all. The habitual attitudes and adjustments of an individual are greatly disturbed at the beginning of a course of treatment and it is unjustifiable to subject anyone to this upset unless the psychotherapy can be carried through to a satisfactory completion.

Any change in the treatment of children by their parents involves an admission of error, of failure, which is difficult to make. Parents frequently devise various kinds of defenses to prevent the necessity of recognizing their mistakes. Some can see nothing wrong in their children's conduct and uphold them

vigorously. More frequently, the child himself is blamed for misconduct that has resulted from incorrect parental guidance. The number of parents who are willing to label the child as incorrigible and even to urge that he be sent to a reformatory is surprising. Such an attitude may be understood only as a parental defense mechanism which seeks to evade responsibility for the youngster's conduct. Another cause of parental resistance, suggested by Lee and Kenworthy (1929), is the fact that a relationship that is unwholesome for the child, such as one involving overdependence, may be very satisfying to the parent's adjustive needs. Parents are unable to comprehend how a circumstance so emotionally satisfying to themselves can be harmful to the child. All of these attitudes require that the parents be slowly educated to an understanding of the child's needs and development, which is a process of psychotherapy in itself. Parental co-operation may be obtained by having the adult gain insight into the child's conduct by expression, assimilation and explanation, and by guiding parents to carry out curative procedures that they have assisted in formulating. This is a procedure vastly superior to that of expecting parents to carry out orders the merit of which is either intellectually or emotionally incomprehensible to them.

Similar techniques sometimes have to be used in dealing with persons other than parents. Teachers, group leaders and employers can often contribute constructive environmental opportunities but do not do so because it is easier to blame the maladjusted person than to help him. Personal relationships between the patient and these other individuals may be improved by allowing the latter full expression of their attitudes and then gradually leading them to a more constructive point of view. A teacher who has participated in the study of a difficult pupil may be brought to regard him as a challenging problem to be solved rather than as a nuisance to be suppressed. Incidentally, the co-operation of a teacher with a clinic in the treatment of a case may be made an educative experience that will have its effect on the teacher's attitude toward the conduct of other pupils in general. Of course, very intensive psychotherapy of a

teacher or similar group leader is never undertaken merely to assist a child adjustment problem. It is more practicable to change the child's teacher or associates than to attempt the time-consuming procedure of remedying their personality traits.

Changing the Environment. If the modification of an individual's present environment cannot be accomplished satisfactorily, an alternative is to remove him from it and to put him in surroundings that are more suited to his needs. A radical change of environment may contribute in several ways to the progress of readjustment. This transfer removes the patient from contact with external stimuli that have become capable of eliciting undesirable or nonadjustive behavior, and hence tends to reduce its occurrence. A change of environment also takes the individual away from his reputation and places him among persons who will expect him to adjust well. The greatest value of this procedure is that it provides relief from miseducative influences that have warped the individual's adjustive tendencies, and an opportunity for re-education under the guidance of more competent persons.

If the problems of adjustment presented by an individual are not too severe, a temporary change of environment may be helpful in breaking up undesirable habits and in starting the training of new ones. In the case of children the resources most frequently used for a definitely limited removal from the home are camps and boarding schools. Summer camps provide an especially constructive influence in the lives of many youngsters. The emphasis in all camps is on self-reliance and the development of a combination of independence and co-operation. A child who cannot become self-sufficient all at once is given someone on whom to depend in the person of a camp counsellor. Unlike a parent, however, the counsellor does not foster the child's dependence because of an emotional need, but can allow the dependence to be used only as a temporary prop while a more independent attitude is gradually developed. Camps contain many rewards for independent action and annoyances for children who seek excessive protection, so that the satisfying quality that dependence has at home does not exist.

Overaggressive and egocentric children have their habitual patterns broken up by the necessity of constant contact with others of the same age. This will throw them again into trial and error, from which stage skillful guidance may cause desirable social habits to emerge. The routine of a camp has an integrative and calming effect on "nervous" children, since it removes many sources of frustration and conflict common in badly managed homes.

Most boarding schools are not organized to give mental hygiene service, and may or may not be beneficial. If any good comes from sending a child to such a school, it is only because it removes him from intolerable home conditions. A relationship that a child may develop with a well-adjusted and sensible teacher may provide training that the child did not receive from his parents, even though the teacher may not attack the problem psychologically. A few schools now exist that provide psychiatric service especially designed for children and adolescents who present problems of behavior or personality.

For adults whose financial status permits, health camps, resorts and vacations may provide changes of environment of considerable readjustive value. The physician's traditional prescription of a "change of climate" for a psychoneurotic patient probably has its greatest merit as a method of removing him from his present environment. It is not so much from the rest or the "sea air" that the worrying business man or neurotic wife benefits as from the removal of annoying stimuli and from a change in habits of living. This type of environmental therapy may be useful in itself for some cases. During the vacation, the individual's typical responses to the stimuli of his maladjustment have a chance to die out through disuse, leaving the way open for a new attitude on his return. Environmental changes for adults are most successful when accompanied by psychotherapy.

Many minor environmental changes that do not necessitate complete separation from home may be of assistance in mental hygiene. Joining in activities such as those of clubs, teams or scout troops is an environmental change since it keeps the child

away from undesirable home or neighborhood influences and may educate him to new adjustments. Modifications of school status are often necessary. Maladjustments may be aggravated by an unsuitable course of study, by placement in too high or too low a school grade or by an unfulfilled need for some type of special education. Vocational guidance, especially when given to young persons, may aid them to abandon an unsatisfying occupation and to enter one more in keeping with their interests, ambitions and abilities.

Placement. The most radical of environmental treatments for a child or an adolescent is to take him from his family and home and to place him in another. This method is used by clinical agencies when it is felt that no other procedure will be effective. Placement can be carried out at present only when parents consent to the separation, when economic as well as psychological poverty exists, when the youngster has made himself subject to court action by delinquency, or when home conditions are so unspeakably bad that legal intervention is possible. Many clinicians feel that placement would be a desirable method of treatment for other cases in which it cannot be employed for lack of parental co-operation. Placement today means putting the youngster in a normal foster home. Institutions in which orphaned, economically dependent or delinquent children are still sometimes herded are on the whole poorly regarded by mental hygienists, since they lack the essential qualities for the re-education of personality. Only children with habits that are a menace to the community and that are practically unmodifiable because of long-continued mistraining are recommended for institutional care.

The most important factor in successful placement is the selection of a desirable foster home. There is no formula for determining what a good home is, for each case presents its own special needs. Some children may need a calm and quiet home, others a busy and cheerful one, or one that is stimulating. In general, suburban or rural homes have been found more suitable for placement than have city homes. The one universal requirement is that the foster parents shall themselves be well-

adjusted persons. The first placement of a child should be in a home that differs markedly from his own in whatever factors contributed to his problem, but that is like his accustomed surroundings in non-essentials. This prevents too great a demand on the child's adjustive ability at the outset. The social and intellectual requirements of the foster home must be within the child's range of attainment. To place a youngster who has poor training in manners in a home where exact observation of social niceties is expected at once may cause conflict rather than reconstruction of behavior. The greatest educative value of foster homes usually grows out of the personal relationships between the child and the foster parents. By this means, the motivation of the child may be changed, his adjustive attempts guided, and satisfactions provided that his own parents were unable to supply.

General supervision of placements is usually maintained by a social agency, but not in such a manner as to rob the foster parents of their primary responsibility. In many cases placements have to be changed because of an initial error in the selection of a foster home, because of changes in home circumstances developing after placement, or because of the child's outgrowing the home and needing a different type of care to promote further development. In a series of 339 children studied by the Judge Baker Foundation, a total of 901 replacements were necessary, some children being successfully adjusted only after ten or more different homes were tried. In many cases, psychotherapy is carried out concurrently with placement, and the success of treatment may be due to both factors. The aim of placement may be to retrain a child so that he is able to return to his own home after a number of years, or placements may be continued until he has reached an age of self-support.

THE TERMINATION OF MENTAL HYGIENE TREATMENTS

Case Closing. There is no general agreement as yet among practitioners and clinics as to when the treatment of an indi-

vidual should be considered as concluded. In mental hygiene there is no definite point at which a complete cure is reached, analogous to the cure of a disease which forms a useful concept in general medicine. Many treatments are discontinued because the patient does not return for further consultations. This may be due to his feeling that success has been attained and that there is no further need for treatment, or it may be caused by the opposite impression, that treatment is doing no good. Cases are often prematurely closed by such events as the removal of the patient to another locality.

Ideally, the decision as to the closing of treatment should be a joint one made by the clinician and the patient, or by his parents in the case of a young child. In organized clinics, closing is usually made the subject of a staff conference. Cases may be closed as successful or partly successful when the clinicians believe that the individual is able to carry on alone, or is sufficiently well adjusted as not to justify the expenditure of further time and energy by trained workers. Cases may be closed as failures when all resources have been exhausted or when problems such as serious mental disorder or delinquency have developed that are felt to be beyond the scope of the facilities available.

Case closing is often made a definite part of treatment. It gives the opportunity for a final series of conferences between the clinician and the persons concerned, which may be directed toward the specific end of stimulating continued independent action. The way is left open for the individual to return for assistance if he feels that his needs have not been supplied adequately, or if new adjustive problems arise that are beyond his ability to solve.

The Success of Treatment. The scientific evaluation of the results of mental hygiene treatment involves a number of serious difficulties. At present, there is no objective method for measuring how much good has been accomplished in each case. Investigators are compelled to use such crude classifications of outcomes as "success," "partial success" and "failure." Moreover, there is likely to be disagreement among parents,

teachers, patients, and even among clinicians themselves as to how successful the outcome of a given case should be considered. A further source of error is the fact that many maladjustments may be cured by changes of circumstances and changes of personal attitude without clinical treatment. The proportion of treated cases that would have had favorable outcomes even without clinical service remains problematical. The crucial experiment would be to diagnose a large number of cases and to treat half of them, leaving the carefully matched other half without remedial attention. This experiment has not been performed. It is unlikely to be conducted in the near future, since clinics feel that their duty is to give service to all patients to the extent of their abilities.

Some clinics have kept statistics from which serviceable estimates of success of full clinical treatment may be made. The Bureau for Children's Guidance, maintained in New York by the Commonwealth Fund from 1922 to 1927, has reported a careful study of the outcomes of 196 cases selected at random. Of these 93 (48 per cent) were regarded as successful by the clinic staff, 61 (31 per cent) as partly successful, and 42 (21 per cent) as failures. (Lee and Kenworthy, 1929.) A group of 61 unselected cases were specially studied for the purpose of comparing parental appraisal of success with that made by the clinic. The results of this study are shown in Table 3.

No clinic or practitioner expects one hundred per cent successes in mental hygiene treatment. Failures must be regarded

TABLE 3. CLINICAL AND HOME APPRAISALS OF THE SUCCESS OF TREATMENT
From 61 cases studied at the Bureau for Children's Guidance. (Lee and Kenworthy, *Mental Hygiene and Social Work*, Commonwealth Fund, 1929.)

Staff Appraisal	Family Appraisal			Total
	Success	Partial Success	Failure	
Success	23	7	3	33
Partial success	11	9	0	20
Failure	0	5	3	8
Total	34	21	6	61

as due to sheer inability to make the desired modification of behavior, but they cannot be ascribed in all cases to the inadequacy of the methods employed. Clinicians are not omnipotent, and are able to manipulate only a portion of the formative influences that may affect the individual. Failures may arise from the lack of a sufficiently early attack on the problems involved, since expert assistance is often called upon only when maladjustment has already reached serious proportions. Other failures may be ascribed to the inability to change social and economic environments, due to unfortunate characteristics of the entire structure of society. Clinicians are often unable to rectify causal factors that they clearly recognize, this being especially the case with fixed habits and attitudes of parents.

Even in cases recorded as failures the work of the clinician has not always been futile. Improvement occurs in some instances but not to the point that would justify considering the case a success. Through its failures, the science of mental hygiene often gains a better understanding of the causes of maladjustments that may be of assistance in dealing with other cases. In its present state of development, mental hygiene cannot judge its success on the basis of individual cures alone. A broader educational function is served by all mental hygiene work, in training parents, teachers, social workers and the public in general, to recognize problems of adjustment, to prevent the occurrence of maladjustments, and to seek expert assistance before it is too late. These aims may be attained in connection with unsuccessful individual treatments as well as with successful ones.

SUGGESTED READINGS

Howard and Patry, *Mental Health*, chaps. 13, 14 and 15, is a valuable reference on the study, evaluation and treatment of children's maladjustments, and contains many illustrative cases. An objective method of psychotherapy is described in Hamilton, *Introduction to Objective Psychopathology*. Taft, *The Dynamics of Therapy in a Controlled Relationship*, copiously illustrates the methods of psychotherapy used with children. Material of considerable value is contained in the older works: Janet, *Principles of Psychotherapy*; and Münsterberg, *Psychotherapy*. Dorcus and Shaffer, *Textbook of*

Abnormal Psychology, chap. 12, gives a critical description of several methods of psychotherapy. An interesting instance of this type of treatment in the after-care of a person recovering from a psychosis is given by Hillyer, *Reluctantly Told*.

For descriptions of treatment in all of its phases, consult Lee and Kenworthy, *Mental Hygiene in Social Work*. Healy and others, *Reconstructing Behavior in Youth*, discusses treatment in general, with emphasis on the technique of placement in foster homes.

The journals, *Mental Hygiene*, and the *American Journal of Orthopsychiatry*, contain a wealth of material on the theory and practice of mental hygiene.

CHAPTER XVII

APPLICATIONS OF POSITIVE MENTAL HYGIENE

MENTAL HYGIENE IN EVERYDAY LIFE

The Rôle of the Layman. The practice of mental hygiene is not limited to the work of clinics, or the treatment of maladjusted persons. In a very real sense, everyone is engaged in mental hygiene, whether he intends it or not. In this respect, mental hygiene is like all of the other fields of knowledge that are intimately concerned with human welfare. All of the fire departments of the country could not extinguish the conflagrations that would ensue if persons in general were not careful in preventing fires. Physicians and hospitals would be inadequate to cope with disease if individuals did not assume responsibility for their own health and that of their communities. Similarly, preventative action in mental hygiene is of more fundamental importance than is remedial work to repair damages already done. If all persons who deal with others, especially parents, teachers and employers, governed their influence by principles of mental hygiene, there would be fewer lame and deficient personalities for clinicians to treat. The constructive measures that are applied to create effective personality have been termed *positive mental hygiene.* No unique principles are necessary in this field, for the theories developed throughout this book pertain as much to the psychology of those who adjust well as to those who do so poorly.

It is often asserted that only good intentions and common sense are necessary to bring about successful outcomes in human problems. This is a half-truth. Many well-adjusted persons have lived in the centuries before any scientific study of human nature was begun. Such individuals owed their good fortune to the vague and unanalyzed formulations of mental hygiene principles that have always existed in folklore, religion and tradition. The need for the precise study of human problems

exists, none the less. A hundred years ago persons who were ill were bled to cure their ailments. Modern medicine recognizes the futility of this procedure. But children are beaten and scolded even today because parents still in the dark ages of mental hygiene believe that this is an effective way of guiding their conduct. Some of mental hygiene is as old as the Bible and has existed as long as there have been kind and understanding persons. Other principles of equal importance directly contradict the traditional beliefs of even the wisest of grandmothers.

The rôle of the layman in mental hygiene is exactly analogous to the part that he plays in respect to physical health. Parents and teachers do not treat serious physical illnesses, but must know how to recognize their presence, in order to call on a physician in time. In providing proper diet, sleep, exercise and healthful surroundings, on the other hand, the responsibility of the parent is a primary one. As far as pronounced disorders of behavior are concerned, laymen need only to know how to identify them, to learn to consider them from an objective rather than a moralistic viewpoint, and to seek such expert assistance as may be available. In the everyday problems of the development and training of emotional and other habits, the intelligent and informed parent or teacher can contribute directly to the building of an effective personality. Also, just as parents bind up the child's little wounds of physical injury, so some remedial service may be rendered on the occurrence of simpler and more common maladjustments.

Any attempt to describe the applications of mental hygiene in everyday life is presumptuous, for each of the fields in which the psychology of adjustment may be applied deserves a volume or even several volumes for itself. In a limited space little more can be done than to suggest a few of the areas in which mental hygiene may serve the needs of teachers, employers, social workers and parents, and the individual who wishes to help himself. Persons whose interests lie in one of these special fields can find further information in the readings recommended at the end of the chapter.

MENTAL HYGIENE AND EDUCATION

The School and the Individual. The aims of education and of mental hygiene should be the same, namely the development and training of the individual for effective living in his social environment. Popular opinion and the judgments of educational philosophers unite in recognizing that the most important outcomes of education are the general habits and attitudes that make the individual better able to attack his life problems, rather than the specific skills and bits of information that he acquires. The responsibility of the school is not limited to intellectual training. The child comes to school as a whole, and it is impossible to separate his intellectual functions from his motives, emotions and social adjustments. This is especially true in modern education. A century ago, when terms and hours of school were short, there was some justification for regarding the pupil merely as a passive learner. He obtained the majority of his most valuable educational experiences outside of school. Today the school demands a third or more of the pupil's waking hours, compulsory education laws make every child attend, and an increasing number of duties formerly assigned to the home are being assumed by professional educators. This greatly increased opportunity must be met with increased responsibility for the child's general welfare.

In many ways the conventional school thwarts the pupil's needs and is a destructive influence, whereas it should be an integrating and adjusting one. A large number of maladjustments show their first symptoms in school situations. These include the pupil's failure to learn to the extent of his ability, special subject difficulties, daydreaming, unruly behavior, refusal to co-operate, cheating and truancy. Even behavior problems such as bullying and stealing, which may occur entirely outside of school hours, are often influenced by educational maladjustments. The school is seldom the sole cause of these conduct problems, but may be a contributing factor in many. Teachers who shirk their responsibility by blaming forces beyond their control may be suspected of rationalizing in

self-defense. They can perform effective service in removing maladjusting circumstances and in assisting the cure of maladjustments already created.

The school has two responsibilities for mental hygiene. One task is to purify itself of practices that cause pupil maladjustment and to organize for the detection and remedy of undesirable traits among its students. The rôle of the school is not limited to the performance of these entirely negative virtues, however. The greater need is to make education a positive and constructive experience that will prevent maladjustments not only in school but in the subsequent periods of the students' lives. All of the functions of the school, including instruction, "discipline," promotion, provision for individual differences, and vocational and educational guidance, may be made to contribute to these ends.

The Hygiene of Instruction. A condition familiar to every teacher, whether in the elementary grades, in high school or in college, is that of the student who seems unable to learn a certain subject in spite of adequate mental ability. Scoldings, low marks, and even sincere attempts to discover the cause of the trouble and to tutor the student back to good standing, all appear to be ineffective. Some of these special disabilities are due to habit defects of an entirely educational nature. They can be analyzed by means of diagnostic tests that reveal the specific weakness of the student and cured by remedial training that is directed toward the inadequate habits. Considerable progress has been made in devising diagnostic and remedial procedures for the basic elementary school subjects, such as reading, handwriting, arithmetic and spelling. In other cases, especially in high school or college, scholastic disabilities may be due to a lack of knowing how to study. This also may be cured by retraining, but not by mere exhortation and advice. The remedy of subject disabilities may be a useful tool of mental hygiene, for they frequently lead to attitudes of inferiority and other general maladjustments.

Another class of school disability which is very perplexing to teachers and of special interest to mental hygiene is caused by

emotional conditioning or maladjustment in relation to a subject. These unfortunate conditions may arise in a number of ways. Sometimes a pupil experiences difficulty in his first contact with a subject, which is met with scolding, criticism and threats. A fear-conditioning occurs which makes the very sight of the material of that subject a stimulus for a disorganized emotional response. If the student is thrown into a nonadjustive emotional state every time he tries the subject, he cannot learn it since the emotion inhibits an intelligent and constructive attack. In some cases, the simple fear-conditioning is complicated by a still more disorganizing factor. Lack of success in a subject or in school work in general may cause criticism and punishment at home which the child may interpret as a deprivation of parental love and approval. This is especially likely to occur in a previously overdependent child who has attached an excessive value to his parents' favorable attentions. The school work then seems to stand between the child and his accustomed satisfactions, hence an emotional attitude toward it is developed which prevents intellectual accomplishment. Still other adjustment mechanisms may affect school accomplishment in some children. Gates (1930) describes a boy with a very stubborn reading disability whose trouble was finally solved by the discovery that the defect was being cherished as the youngster's sole claim to distinction. He was "the guy that no one could teach to read," and obtained great satisfaction from the attention bestowed on him because of it! A change in motivation and the provision of other adjustive satisfactions brought about a cure.

The general nature of a program for retraining a child whose school disabilities are due to emotional maladjustment can be outlined, although immediate results cannot be expected in chronic cases. First, criticism and punishment for failure must be discontinued at once and replaced by praise for accomplishment. Then the study of the subject must be begun again, under the guidance of a new and sympathetic teacher to whom the child can form a positive attachment. The retraining must make the pupil feel successful in his new contacts with the

study. Gradually, the fear responses will be extinguished by associating the school subject with pleasant and tension-reducing situations instead of with frustration. Occasionally even these methods will be ineffective when a school disability has become bound up with serious problems of personality and adjustment. Then only a thorough clinical study and extensive psychotherapy can relieve it.

The aims of mental hygiene are promoted more effectively by preventing school disabilities than by remedying them after the damage is already done. Praise and encouragement should replace criticism and failure as incentives, regardless of which is more "deserved" in the older moralistic sense. Hurlock (1925) compared the achievement of two groups of children in arithmetic, one group being praised daily for good accomplishment, the other scolded. The reproved group gained after one scolding, but decreased in ability thereafter, while continued praise resulted in improvement throughout the entire period of the experiment. The dull children who "deserved" reproof the most were most favorably affected by praise. The competitive nature of school marks is unhygienic. A better procedure is to have each pupil compete with his own past record and strive to improve, rather than to surpass his fellows. Teachers should especially avoid attempting to motivate pupils by critically or sarcastically comparing their work with that of others. If each student can be made to feel some measure of success, negative attitudes toward school subjects can be avoided. Another valuable preventative method is to discover incipient disabilities before the pupil has developed a nonadjustive attitude toward them, and to apply remedial techniques at once. These procedures have value not only as efficient educational devices, but also as means for attaining the ends of general mental hygiene.

Positive Contributions of Instruction to Mental Hygiene. The cure or even the prevention of educational maladjustments represents only a small part of the possible contribution of instruction to mental hygiene. The school should provide experiences that improve the general adjustive habits of students.

It should give them an increased understanding of their own aims and conduct, should develop emotional control and an integrated problem-solving attack on personal difficulties. For a long time it was believed that these ends resulted automatically from the study of school subjects. It was supposed that practice in memorizing anything resulted in a general improvement of the pupil's "memory," and similarly that the reasoning done in such subjects as arithmetic and geometry increased the ability to reason in life situations, and that by mastering studies of great difficulty the pupil strengthened his "will," regardless of the intrinsic merit of the subject. This viewpoint was known as the doctrine of mental discipline. If it were true, the gain to mental hygiene through the improvement of "reason" and "will" would be obvious.

Experimental work early in the present century dealt a serious blow to the theory of mental discipline, however. It was fairly conclusively proved that mere practice in memorizing one kind of material does not always improve the ability to memorize other things; in fact, it may actually lead to a decrease in the efficiency with which some other materials can be learned. (Sleight, 1911.) A large amount of practice in arithmetic reasoning may cause very little improvement of the ability to reason in non-arithmetical problems. (Winch, 1922.) There is no perceptible relationship between the difficulty of a subject and the general intellectual gain that may result from studying it. (Thorndike, 1924, 1927.) Such evidence caused educators to despair of training general traits of character and personality by means of school studies. In an experiment of special interest to mental hygiene, C. R. Squire attempted to see if any gain in neatness and accuracy in school work in general would result from an insistence on these qualities in arithmetic. His first results were similar to those of the other experiments cited. Arithmetic papers improved in neatness, but the pupils' papers in language and spelling were no neater than before. If neatness will not transfer from one school subject to another, it is futile indeed to expect this trait (or honesty, or problem-solving ability, or "will-power") to transfer from school to life situations.

These experiments do not tell all of the story, however. Further studies offer a more hopeful outlook for the training of general qualities of character and personality. Ruediger (1908) repeated Squire's experiment on neatness with a very significant variation in method. Pupils were coached in neatness in connection with one school subject, not merely by insistence on neat work, but by discussions of the value of neatness in dress, business, the home, and other real-life situations. The greatest gain in neatness occurred in the subject in which the emphasis was given. But, contrary to Squire's result, Ruediger's pupils also gained in neatness in their other subjects, although this trait was not mentioned in these classes. More recently this finding has been confirmed by several other experiments. It is now certain that a general characteristic can be improved through school instruction, *provided a deliberate effort is made to show the student the real-life applications of the trait being practiced.*

This principle has important implications for mental hygiene. Mere practice in problem-solving in school does not aid the individual to solve his adjustive difficulties; neither does mere preaching about virtues have any appreciable practical effect. But a procedure that gives the student practice in a valuable trait and at the same time gives him insight into how the method can be applied to his own real needs has considerable likelihood of being effective. Most of the school subjects can be used as vehicles for achieving this genuine kind of education. Composition and public speaking can be made to assist the student to express his problems clearly and freely. The study of literature can give insight into human difficulties and their solutions and can help the student understand the motives and behavior of others and of himself. History can teach the origin and necessity of social institutions that perplex the youngster. Mathematics and science can be made the basis for an understanding of orderly and systematic processes of thinking. By proper adaptation to the abilities and needs of students of various degrees of maturity, these values may be achieved at all levels of education. But it must be emphasized again that the

conventional teaching of the subjects for their own sakes will not accomplish the results needed for the development of personality. Only when the primary attention is paid to the learner and his needs, and when the school subjects are regarded only as tools for the development of individuals can instruction contribute to mental hygiene. Great teachers have always done so, and the use of this method has been that which has made them great. What is needed is the deliberate extension of the hygienic view of education to the majority of teachers, who would not devise this method of attack by themselves.

On the premise that the development of a well-balanced personality is more important than is the mere learning of soon-forgotten subject matter, a number of educators have abandoned the conventional curriculum entirely, and have turned to a type of school organization designed expressly for the adjustment of the pupil. This movement has found its clearest expression in the *child-centered* or *progressive* elementary school. In such a school large units of subject matter originating from the needs of the pupils and rich in developmental possibilities, replace most of compartmentalized routine of separate school subjects. Pupils in the first grade may be found studying community life with special emphasis on food supply. At a higher level of maturity, a group of sixth-graders may spend a year studying how man has made and used records. Educational tests have shown that pupils gain as thorough a mastery of the fundamentals from this curriculum as from the conventional one. The chief advantage of the progressive approach, however, is that it teaches children how to live by giving them practice in living, instead of by the less effective and more common device of compelling them to store up knowledge supposedly for later use. That mental hygiene in the broadest sense is the aim of this type of education is too little recognized. The literature of progressive education provides stimulating reading for persons interested in any phase of the psychology of adjustment.

The Hygiene of Individual Differences. One of the most common causes of maladjustments in school is the discrepancy

that may exist between the abilities of a pupil and what is demanded of him. This is a result of the inflexible character of the conventional school which requires that every pupil shall study the same curriculum in the same way, and which futilely tries to measure the attainment of all students by the same standards. Even a course of study that is well adapted to the abilities of the majority of students may be totally beyond the comprehension of some of the class, and too elementary to excite effort from another portion. While some school disabilities are remediable, as was suggested in the preceding section, there always remains a number of pupils who are unable to keep up to average attainment because of relatively unmodifiable limitations of intellect or because of faults in their cultural environments that the school cannot reach. The conventional method of handling these pupils is to subject them to continued failures and to compel them to repeat grades. This not only causes educational inefficiency and economic loss, but also creates attitudes and habits that are destructive of good personality adjustments.

Repeated failure in school subjects and grades thwarts the pupil's strong motives for mastery and approval. Fortunately, many are able to adjust by developing balancing factors outside of school or by limiting their feeling of frustration to the school situation itself. Other pupils develop negativistic attitudes or erect defense mechanisms that often take the form of antisocial behavior. Several research studies have shown that dull pupils or those who are over-age for their grades tend to be disciplinary problems. For example, Haggerty (1925) found that the incidence of undesirable forms of school behavior was two to three times as great among retarded as among normal or accelerated children in the first seven grades. Some years ago it was incorrectly assumed that mental dullness itself was the cause of misbehavior. It is now fairly certain that the conduct problems arise only from the way that the school treats the dull pupil. Denied satisfaction in achievement, he may seek it by behavior involving cheating, lying, defiance of routine, stealing or truancy. Under these circumstances the pupil receives

positive mistraining in unfortunate habits. While seeking to give him an education, the school, because of its inflexible organization, has in reality prevented the child from becoming educated.

The pupil of superior intelligence is also educationally maladjusted in the conventional school, for he is kept from progressing up to the potentialities of his ability. Bright children are appreciably less likely to develop serious conduct problems from this situation than are the dull, but some maldevelopments of personality traits occur. Compelled to sit through lessons that are boresome to him, the gifted pupil may resort to daydreaming and develop habits of seeking unreal satisfactions. The lack of a necessity for effort leads to slipshod habits of work which prove embarrassing in later years when concentration is demanded. Some bright pupils devote their spare time to mischief and thus get a reputation for bad conduct, even though no real maladjustment exists. A number of the cases described in Part II show how lack of provision for individual differences in the schools contributes to general maladjustments in many youngsters.

Adaptations of the school for individual differences in ability are now being made in many educational systems. The recognition of individual differences is usually justified on the grounds of educational efficiency. While this is true and important, considerations of mental hygiene present an even greater need for the differentiation of instruction according to ability. Various devices are used to accomplish this end, extended descriptions of which may be found in books on education. One method is to place the pupils in sections according to ability, which may then undertake the same subject matter at different rates of progress or better still, study different curricula which are made up to suit the needs of each group. Another system is to give instruction in the fundamental subjects, in which ability differences are most notable, by means of individual drill material, each pupil progressing at his own rate. In the child-centered school few provisions for individual differences are necessary, for each student contributes to the group

project according to his ability and learns while doing so. At the high-school and college levels, various courses of study and electives allow for individual standards and directions of attainment. These differentiations are most efficient when educational and vocational guidance is available to assist the student in selecting a field in which he can succeed. Adequate provisions for individual differences at any level aid the school in accomplishing its primary aim, which is the development of effective, socialized and well-balanced individuals.

The Hygiene of Discipline. The original conception of a disciplined person was of one whose actions are controlled and integrated, who is able to exert his efforts purposefully and with a self-directed orderliness. This kind of discipline is synonymous with many important aspects of good adjustment. The development of the truly disciplined individual is an important purpose of education, and is valuable for mental hygiene as well. Since all of the psychology of adjustment is pertinent to this problem, no lengthy description of how to attain real discipline is necessary. The training of independence of action, of insight into conduct, of a problem-solving attack on difficulties, all contribute to discipline as properly conceived. It is obvious that these ends can be achieved only through self-initiated or adjustive activity on the part of the pupil by which he learns to satisfy his motives directly, effectively and with due regard for the personalities of others.

Unfortunately, the term discipline has become perverted to mean an orderliness repressively imposed by authority, and "to discipline" has even become synonymous with "to punish." This misconception is a survival of the mistaken medieval notion that discipline in the original sense can be achieved only through pain and deprivation. This ascetic concept has almost vanished from the philosophy of modern life, yet many schools perpetuate it unwittingly, probably because poorly trained teachers find it easier to suppress pupils than to guide them. Such a method, of course, defeats the proper aims of education.

In its narrower meaning of order and good conduct, discipline presents several problems of interest to mental hygiene.

A certain amount of disorder in a classroom is healthful. A hard-working group is never entirely quiet, for some moving about and communicating with other pupils is essential to co-operative effort. In progressive schools the bustle of intensely motivated activity replaces the stereotyped forms of order seen in the old-fashioned classroom. In ordinary schools, a different type of disorder results from idleness. When the pupil has nothing to do, as when he is waiting his turn in the conventional recitation, his natural drives to random activity will be in evidence. Restlessness, squirming and the discovery of more interesting occupations such as tormenting a neighboring pupil are the inevitable results. A student who is intent on the completion of a well-motivated task does not have time to be disorderly. Most of the petty infractions of discipline that plague teachers arise from the inherent faults of the suppressive regime of the conventional classroom.

Even the provision of as perfect a curriculum as can be devised will not eliminate all conduct problems, for a few pupils will still be found who persistently show misbehavior of greater or lesser degree. Such students should always be considered as maladjusted. Moralistic attitudes and punitive measures are as entirely inadequate for dealing with such problems as with any maladjustment. Misconduct is a symptom, not an isolated phenomenon, and symptoms cannot be treated directly. Whispering may arise from an excessive need for attention as part of an egocentric maldevelopment. Boisterous and unruly conduct is frequently a symptom of compensation for inferiority. Cheating is a means of adjusting to lack of success. Truancy is usually a withdrawal from a school situation intolerable to the pupil's motives. The teacher with a psychological viewpoint can remedy some of these problems without more expert assistance by looking for the causes and seeking to remove them. There can be no set formula for treating any conduct problem. Whispering, for example, which is the most common and annoying of pupils' sins against order, may arise from many causes. If a pupil whispers to gain information about a lesson, it is justifiable and should be incorporated in

school procedure. A pupil may whisper because he is idle or bored, in which case better motivated work is the remedy. He may whisper to gain the attention of the teacher or pupils, which need should not be suppressed but should be applied to a useful activity that will teach the egocentric child the socialization that he lacks. In many instances an understanding teacher may win over a disorderly pupil by means of a personal attachment, after which his conduct can be directed into constructive channels. The good teacher needs to be extremely resourceful in problems of conduct. No set of tricks of classroom method can replace a fundamental understanding of human nature as a necessary part of the preparation for the teacher's task.

For more serious or persistent conduct problems, clinical assistance is necessary. A few school systems have complete child guidance clinics within their own organizations, while others utilize community resources of this type. Teachers may do a considerable service to mental hygiene by recognizing maladjustments early in their course of development, and by co-operating with clinics in their study and treatment. Children who present problems not commonly considered as disciplinary such as those who are "queer," suspicious, withdrawn or unsocial, may also be discovered by psychologically trained teachers and referred for the clinical help that they need.

The Adjustment of the Teacher. The quality of the school's influence for mental hygiene is determined in no small measure by the personal characteristics of its teachers. The attitudes and habits of adjustment that the pupil learns depend more on the social relationships of the classroom than on the more academic aspects of education. Consequently, a teacher whose traits of personality call forth unfavorable reactions from the students can wreck the best-planned curricular provisions for mental health. Some teachers are overaggressive in their actions toward pupils, bullying them, looking for small infractions of the rules, and constantly asserting their own mastery and superiority, often by sarcastic and critical comments. Other teachers show a lack of emotional balance, being inconsistent in their treatment of pupils, flying into a rage at misdemeanors, or

displaying "nervousness" and excessive sensitivity to the difficulties of the classroom. On the other hand, there are teachers who appeal to the class for sympathy, who try to win approval by granting special favors, or who shower affection on one or a few pupils while neglecting the rest of the class. All of these forms of teacher behavior are destructive of good adjustment for the students.

It is easy to take a moralistic attitude toward teachers who commit these offenses against mental hygiene, and to advocate their dismissal. But it must be remembered that teachers are human beings and, like all others, have their own problems of adjustment. Teachers who have unfortunate characteristics of personality are not merely ignorant or perverse, but are suffering from maladjustment. Many adjustive difficulties of teachers arise from common causes. They suffer the same frustrations of motives as do other people, and may be unable to adjust constructively because of inadequate habits or developmental defects acquired earlier in life. In addition to the more general causes of maladjustment the teaching profession provides some special situations that make it hard for teachers to remain well balanced. It is admittedly a difficult and fatiguing task to deal with forty lively youngsters all day in a classroom. Teachers are often poorly prepared for their work, which creates a need for them to be on the defensive. The low salaries and unesteemed status of teachers also contribute to an attitude of inferiority. Unmarried teachers away from home frequently live in rooming houses and do not have the integrating influence of home life and of social outlets. The sexual maladjustments of unmarried teachers, often thoroughly repressed and unrecognized, undoubtedly make for nervousness and other persistent nonadjustive reactions.

The psychology of adjustment makes clear the relationship between the frustrations of teachers and their typical undesirable classroom habits. Overaggressive behavior and the assertion of mastery are compensatory mechanisms for overcoming an attitude of inferiority. This attitude may have been built up by the teacher's childhood or adolescent experiences, by the

struggle necessary to gain an education, or may result from recent factors such as a sense of inadequacy for the task of teaching, or an unfulfilled desire to enter some other profession. The control of children in school offers an exceptional opportunity for compensatory behavior. In fact, it has even been suggested that some persons enter teaching in order to gain the motive satisfaction that results from lording it over the helpless pupils. Appeals for sympathy from the class are often the result of the emotional maldevelopment of the teacher that causes an excessive need for love and favorable attention. Persistent nonadjustive reactions result from many serious thwartings of motives for which no outlets can be found. When a teacher says that a class makes her nervous or "drives her wild," it is, of course, her inability to adjust to the situation that is the real source of the emotional response.

Most of the personality handicaps of teachers are remediable. First, all teachers should make a critical analysis of their own behavior from the point of view of mental hygiene. The motives underlying the teacher's methods of handling pupils should be clearly recognized, and modifications made if needed. The teacher should ask, "Am I just gratifying my own drives, or am I directing the school activities objectively, for the benefit of the pupils themselves?" Improvement in competence assists in maintaining an adjustive attitude, for the teacher who is sure of her subject matter and methods will have less need to act defensively. Principals and supervisors have as great a responsibility for the personalities of teachers as for their methods of instruction. Reprimands and orders are no more effective for a maladjusted teacher than for a maladjusted pupil, but a cordial relationship between teacher and supervisor and the making of tactful and psychologically considered suggestions can do much to assist the teacher in working out her own problems. The provision of psychiatric service for teachers in connection with the school health department can, if skillfully administered, turn some teachers from liabilities into educational assets. Even with the best of facilities for mental health, however, there will remain a few teachers so hopelessly handicapped in personal

adjustment that they can be nothing but a menace to their pupils. Since the mental health of a generation of children is more important than is the vocational advantage of one teacher, these individuals must be guided into another occupation for which they may be less poorly adapted.

The teacher of the future must be as much a specialist in mental hygiene as in subject matter or method. Increasing recognition is being given in schools of education to the importance of mental hygiene in the curriculum for prospective teachers. While an intelligent and informed attitude toward problems of personality and behavior will do much good, it is not sufficient. Teachers must be exceptionally well-adjusted persons themselves. This end can be accomplished in part by selection and in part by clinical service. Some candidates for the teaching profession should be debarred because of a lack of good adjustment, no matter what their other accomplishments. A psychiatric examination should be as important in the selection of teachers as are the physical examinations and educational attainments now required. Well-administered vocational guidance can eliminate many misfits among prospective teachers, for few persons wish to enter an occupation for which they know themselves to be poorly qualified. Mental hygiene clinical service for teachers in training can remedy some of the less fixed defects of personality. Selective methods alone are not enough, however, for some persons who were well adjusted when they entered the profession may become maladjusted later. Teachers must be educated to make use of mental hygiene facilities that should be provided for them. By these various means teachers can be supplied who are adequate not only in scholarship and intelligence but also in emotional balance, adaptability and integration.

MENTAL HYGIENE IN INDUSTRY

Vocational Maladjustment. A major part of the activity and interest of every adult individual is devoted to the occupation from which he gains his living. A successful adjustment to his

vocation is an essential in the life of every person. Not only does his economic existence depend on it, but other strong motives of mastery, security and social approval are satisfied by a good vocational adjustment. In view of this fact, the extent of occupational dissatisfaction is of great concern to mental hygiene. Vocational maladjustment is displayed in many ways. One index of the lack of satisfaction of men with their jobs is the amount of labor turnover. Berridge (1929) found that over a period of five years in a time of normal business activity, the number of men separated from their positions each year was 48 per cent of the total number employed. The amount of voluntary separations, in which the men quit their jobs by their own choice, was 30 per cent per year. The rate of turnover varies, of course, from a much smaller figure in some occupations to several hundred per cent in others. Equal evidence of occupational maladjustment is found in the large number of workers who, while retaining their employment, show various degrees of dissatisfaction, worry or inefficiency in their vocational situations.

Until recently it was assumed that a lack of adjustment of a worker to his position was due either to something the matter with the job itself, or to some fault in the worker's competency. These are indeed factors of great importance. Much job dissatisfaction results from too low wages, from unbearable working conditions, from fatigue and monotony. Far-sighted employers have found it both humane and profitable to ameliorate these conditions, and the activities of labor organizations have done much to achieve the same end. Lack of fitness for a position, in the sense of an inadequacy of skill, intelligence or training, also accounts for a proportion of discontent and of discharge. Both fitting the job to the worker and fitting the worker to the job have been fruitfully attacked by industrial psychologists who have investigated such factors as motivation, fatigue and monotony in job situations and also the selection and training of workers.

Only lately has it been recognized that much vocational dissatisfaction is due to a third cause, the existence of general per-

sonal maladjustments in individuals. According to this point of view, much industrial maladjustment is symptomatic of general maladjustment of the kind considered throughout this book. Such adjustive difficulties may be precipitated by situations inherent in the work itself, but they are very commonly brought about by frustrations of the individual's strong motives occurring entirely outside of the business. The predispositions to vocational maladjustment are the same as those underlying any other class of maladjustment. Some predispositions may be physiological, but usually they have their roots in emotional maldevelopment. Medical, psychiatric and personnel surveys have found that large numbers of workers show signs of inadequate adjustive behavior. Executives as well as subordinates, in all kinds of business and industry, are affected. Stevens (1923) found that in a group of 4000 store workers, 509 cases of "functional nervous disturbance" were diagnosed by the medical department in a six-month period. "Functional nervous disturbance," of course, means maladjustment. Anderson (1929) states that approximately 20 per cent of the workers in a large department store were found to be problem cases when a psychiatric survey was made. In general, personally maladjusted workers are inefficient workers, which is a fact of significance to the employers and employees alike. Anderson made careful clinical examinations of the 50 "best" and 50 "worst" sales clerks in a store. Of the best salespeople, 78 per cent showed no disorder of personality, while the remaining 22 per cent had only mild maladjustments. Of the worst clerks only 22 per cent were free from deviations from good mental health, 54 per cent being mildly and 24 per cent seriously maladjusted.

All of the common forms of maladjustment contribute to industrial dissatisfaction and inefficiency. The maladjusting behaviors have been noted for many years, but their sources have not been recognized clearly. Attitudes of inferiority, sometimes acquired in the industrial situation but more frequently due to residuals of early experiences, are a particularly important source of inadequate job behavior. The employee who

resents criticism or who is unable to respond constructively to suggestions for the improvement of his work frequently suffers from a firmly fixed sense of inferiority. Various forms of unpleasant behavior on the part of an executive or worker can often be understood as compensatory mechanisms. Bullying attitudes on the part of foremen, undue insistence on the observance of minutiae of routine and the development of personal eccentricities may be compensatory attempts to adjust to feelings of inadequacy. Rationalization enters in the form of chronic faultfinding and a tendency to blame others. Another variety of personnel problem is represented by the individual whose feelings are always being hurt and who grieves and worries over every change in circumstances. Such persons are often overdependent and, expecting from their superiors in business the same loving consideration that they received from their parents, are thwarted and emotionally upset when they fail to receive it.

A mental hygiene problem in industry that is especially hard to solve is presented by the individual who daydreams at his work. This form of satisfaction has often been adopted as an escape from past adjustive difficulties. In business, the excessive daydreamer is slow, inefficient and prone to accidents because of his lack of attention to the present situation. Worry and "nervousness" are very frequent evidences of maladjustment among workers. These symptoms are indicators of persistent nonadjustive emotional reactions, which may have arisen for countless reasons. The work situation itself may be to blame, but financial, family or sexual maladjustments are perhaps more frequent causes. Hysterical mechanisms account for a large part of illness and absences from work. Surveys have found that about ten per cent of time lost because of illness results from psychogenic ailments chiefly hysterical in nature. Excessive fatigue, aches and pains, and complaining attitudes may also be hysterical. Of special interest are the so-called occupational neuroses, described in Chapter IX, in which hysterical symptoms are developed that act as special vocational disabilities. Somewhat less common, but sure to be met

in any large organization are phobias, compulsive behavior, delusional beliefs of being spied upon or discriminated against, and, in short, all serious forms of maladjustment.

Mental Hygiene Work in Industries. There are three principal ways in which mental hygiene may be utilized to minimize maladjustments in industry. One is by the provision of clinical facilities to which employees may appeal voluntarily for assistance with their personal problems, or to whom executives may refer persons who seem in need of help. A second industrial function that serves mental hygiene is adequate provision for the selection, guidance and training of personnel. Third, and in many ways more fundamental than the other two, is the organization of industry to prevent maladjustments that are due to internal causes by making each worker secure in his position and by making his employment a source of satisfaction to his basic motives.

A number of business organizations have employed psychiatrists and consulting psychologists whose chief function has been the maintenance of personal adjustment among workers. A clinician in industry works according to the same general principles as one in any other division of practice. Each case referred is studied as carefully as possible, by means of interviews and psychological tests and sometimes by case histories gathered by social workers attached to the department. Remedial procedures include consultations for psychotherapy, changes in the type of work performed, medical treatment and the provision of recreational balancing factors. Fisher and Hanna (1931), in an extensive discussion of the organization of mental hygiene work in industry, conclude that the department of mental health should be entirely separated from any executive functions. This is necessary in order to maintain the confidence of the employees, which makes possible the rapport essential to psychotherapy. The clinical office should be closely associated with the department of physical health, for the functions of the two overlap greatly and both should be regarded by employees as primarily concerned with personal welfare. There must also be administrative connections with the employment department

and the personnel manager, but any conception of a mental hygiene office as an adjunct to the hiring and firing of workers defeats its purpose.

There is reason to believe that a department of mental hygiene is at least as appropriate in an industry as is a company physician. From a humanitarian standpoint it offers a service to workers that is of great importance to their happiness and effectiveness in living. From the narrower point of view of profit and loss, the mental hygiene division justifies its existence by reducing inefficiency due to personal maladjustment, by reducing costly labor turnover, and by improving the morale of employees. It is very frequently less expensive to the business to assist a worker in solving his adjustive problems than to discharge him and train another to take his place.

In small establishments the employment of a full-time clinical worker is impossible, but consulting service can sometimes be provided. Much good can be accomplished by a psychological attitude on the part of employers and executives. In the small business in which the owner knows all of the personal histories of his employees and in which a cordial relationship exists between them, there is less need for special mental hygiene service than in a large organization. Every executive, down to foreman, can assist the adjustments of the workers by sympathetically listening to tales of trouble, by adapting the work to their capacities and needs and by giving well-considered encouragement and suggestions for improvement. Employers, like parents and teachers, have to be mental hygienists whether they wish to be so or not.

The use of effective procedures for the selection, guidance and training of workers may assist in reducing maladjustments in industry. This is particularly helpful in eliminating the difficulties caused by the work itself as when an employee is placed in a position that is too hard or too easy for him, that is unsuited to his interests or that brings into prominence relatively fixed undesirable traits of his personality. The initial selection of employees by general and special psychological tests and by scientific studies of personality traits reduces the amount of

misplacement. Guidance work must be continued after the worker is hired, for transfer from one job to another is often a more profitable and always a more humane solution of a work failure than is discharge. Anderson found in his work in the R. H. Macy Company department store that a failure as a sales clerk may make a good cashier and *vice versa*. Much good personal material was saved by careful and continued study of the characteristics of the workers.

There are other maladjusting factors in industry that cannot be cured by clinical service or by scientific employment procedures. The solution of some industrial ills demands a deeper humanitarian attitude that recognizes the value of the worker's life for its own sake and that is based on respect for his personality. The first step in the attainment of general vocational adjustment is the elimination of influences destructive to mental health. These include not only economic and physiological factors such as low wages, long hours, poor housing, but also more definitely psychological factors as overbearing attitudes on the part of employers, lack of responsibility and independence of workers and the frustration of the emotionally derived motives. The elimination of evils from employment is not enough, however. Each man's job should be a central integrating factor of his adult life and a positive source of satisfaction. Everyone knows people who find their greatest personal realization in their work and who would be maladjusted without it. To make employment an adjustive and integrating experience for every individual is the ultimate aim of mental hygiene in industry.

MENTAL HYGIENE AND SOCIAL WORK

Social Problems as Adjustments. To describe the applications of mental hygiene to social work would be to review the entire psychology of adjustment. Social work is the profession which, more than any other, deals comprehensively with the amelioration of human difficulties. At a first glance the many functions included within this field seem very diverse. Social workers

are concerned with family relief, dependency, child welfare, recreation, delinquency and a score of other human problems. In recent years leaders in social work have come to recognize that there is a central problem and an essential method common to all of these various activities, which has been termed *generic case work*. From the point of view developed in this book it becomes evident that much of this common core is the same as mental hygiene. Since the essential subject matter of social work is human nature, psychology is a science basic to this field, along with sociology and economics.

The conditions with which social workers deal are largely problems of behavior adjustment. In some areas of social work, such as child welfare, this can be seen very clearly. Mistreatment of children by their parents does not result primarily from ignorance, nor can it be regarded moralistically. The parent abuses the child because of faulty emotional balance or training, and because the child frustrates his or her motives. To readjust the family situation is a more constructive attack than to condemn the parents and remove the child. Placement of the child may have to be done for a shorter or longer period of time, but work may be continued with parents with the hope of eventually restoring a normal family group. Many problems referred to children's aid societies concern the conduct of the child himself. Such cases often present exactly the same needs as do those handled by child guidance clinics, and are cared for by progressive agencies in essentially the same manner, with or without the help of psychiatrists or psychologists.

Some other types of social problems are less apparently psychological, but may profitably be considered from a mental hygiene point of view. Family relief and dependency, which are perhaps the most common problems of the largest social agencies, illustrate this fact. Formerly the economically insufficient family was studied only to determine whether relief was deserved and how much was needed. Today the social worker's concern is not primarily in the alleviation of the economic symptoms, but in the discovery and cure of the causes that led to the breakdown. In many instances, of course, poverty

results from economic depressions, sickness, old age, and other factors that are not originally psychological. A large proportion of cases, however, are basically due to failures of adjustment. Dependency may be the result of the desertion of the wage earner of a family. If so, the social worker investigates the causes of the family friction which are usually the personality traits and adjustive habits of its members. Remedial mental hygiene may be able to eliminate these causes and restore the functioning of the family as an economic and social unit. Poverty is often caused by the inability of a worker to keep a position because of disadvantageous traits of personality. To label such persons as shiftless and ne'er-do-well does no good. To provide relief for them indefinitely is not only a social injustice, but is also destructive to the self-respect of the persons concerned. The only real cure is to restore the ability of self-support by procedures planned in accordance with mental hygiene. Many other social problems formerly regarded from a purely economic viewpoint can be attacked successfully only by considering the needs and habits of the individual psychologically.

Even in social problems not initially due to psychological inadequacies, the readjustment of individuals is fully as important as the provision of economic assistance. When the supporting member of a family dies, for example, the remaining dependents are left in a state of fear and despair. The social worker's rôle is to modify these attitudes as well as to administer financial relief, for the reduction of misery is perhaps the more significant accomplishment for human happiness. It may be possible to prepare another member of the family to be the wage earner, which requires not only vocational training, but the development of habits of independence and self-confidence. Dependency due to general unemployment is not directly amenable to psychological treatment, being preventable only by social and economic measures, but mental hygiene can do much to maintain the morale of the unemployed. Balancing recreational outlets, a forward-looking orientation, training for a superior kind of work later, and a number of other activities

on behalf of the jobless may keep them from developing attitudes that would eventually make them unemployable. While these steps cannot be a substitute for basic economic changes to eliminate unemployment, they help to conserve human values in the face of temporarily unmodifiable circumstances.

A large number of social workers are engaged in recreational work in settlements, clubs and similar organizations. While their activities are considerably different from those who are occupied with family case work, they, too, are influences for the promotion of mental hygiene. Guided group recreation provides one of the greatest opportunities for the education of desirable traits of personality. The trained recreational leader is usually far ahead of the typical schoolteacher in recognizing that the aim of educational activity is the development of the individual. Many forms of recreation are utilized, ranging from storytelling and puppets for young children, through athletics and hiking trips for older boys and girls, to dramatics and social dancing for young adults. All of these are utilized to teach a desirable balance between independence and social co-operation, to provide constructive satisfaction for motives, in general, to develop personalities that can live comfortably with themselves and with other people.

The Social Worker as a Mental Hygienist. Dealing with the problems of adjustment and personality that have been described, the social worker needs to be equipped with a knowledge of the techniques of mental hygiene to an extent second only to the psychiatrist or psychologist. This is true not only of psychiatric social workers, who are specialists collaborating in mental hygiene clinics, but of all social workers in whatever branch of the profession. The ideal of the social worker as a mental hygienist is imperfectly realized at present. Because of the financial limitations of agencies, many workers are employed who are inadequately trained or who have no professional training at all. The recognition of the real nature of social work is also hindered by the youth of its professional status. Only since the beginning of the present century has academic preparation been offered in social case work. The notion that

social work is an agency for mental hygiene seems first to have been expressed by Mary C. Jarrett only as recently as 1919.

The fundamental techniques of social case work are the same as the procedures of the mental hygiene clinic in their essentials. Some years ago the object of the social case study was to ascertain the facts, and the subsequent visits of the worker were all too often regarded as a means of "checking up" on the behavior of the client. The persistence of the popular belief that this is still the aim of visiting causes much of the distrust with which social workers are sometimes regarded. Modern social work does not operate on these principles. The case history now minimizes the importance of the material facts, although they still have to be ascertained, and emphasizes the developmental factors in the lives of individuals and the interplay of motives and adjustments in the family group. Only by understanding the attitudes and behavior of the clients as individuals can a plan be made for rehabilitation.

The relationship of the social worker and the client is a psychotherapeutic one. The most powerful tool of the social worker is her rapport with the client. A sympathetic yet objective relationship is developed, very similar to that between the psychiatrist and his patient. To accomplish this requires an approach that is tactful, that recognizes the point of view of the client and, above all, that is not authoritative and domineering. Only through rapport can the client be made to disclose the really important causal factors of maladjustment in his past experiences. When a desirable relationship has been established, the amount of personal information that the client will give concerning intimate affairs is often astonishing. As in the clinic, the interview has therapeutic as well as diagnostic significance. The interviews have considerable value to the client as a means of release. It is common for the social worker to be met with a long tale of woe or even with vehement denunciations. The worker tolerates these expressions and develops the art of being a good listener, for remedial purposes. Interviews also serve as opportunities for the extinction of undesirable emotional attitudes through catharsis. The social worker in

her rôle as a psychotherapist allows a certain amount of attachment and dependence on the part of the client, which may be utilized to guide him into desirable adjustments. Explanation, assimilation, suggestion and advice are used according to psychological principles. The aim of the social worker is to make the relationship between herself and the client educative in the broadest sense.

The mental hygiene functions of social work may be prevented from reaching their full value by a lack of psychological training and understanding on the part of the visitor. This deficiency is remediable by direct procedures of professional education. A more subtle hindrance to the effectiveness of the social worker arises from the interference created by her own emotional responses and inadequate adjustments. A worker may have been reared in a slovenly home, for example, and may have reacted with shame, emotional sensitivity, and the formation of defense mechanisms. A shiftless and ill-kept household, therefore, arouses an emotional attitude of disgust and aversion. As a result she may scold and admonish the disorderly housekeeper instead of impersonally determining how the woman can be motivated and trained to improve in her care of the home. The worker who has an emotional sympathy for mistreated children cannot succeed in changing the attitudes of their parents because she is inhibited from assimilating the parental point of view, which is necessary for rapport. Many other examples could be cited to show that, in general, attitudes of blame or resentment on the part of social workers usually point to weak spots in their own adjustive equipment. Many nonadjustive and defensive attitudes of social workers can be remedied by their teachers while in training or by their supervisors while in service, by giving them psychological insight into the origins of their own behavior.

Schools of social work are meeting the need for the application of mental hygiene principles in the field by giving this subject an important place in their curricula. The instructional material offered includes general courses in psychology, special courses in mental hygiene and practical field training in case

work. The general courses of introductory psychology, experimental psychology, child psychology, educational psychology and the like are often studied as a part of the undergraduate program in preparation for the study of social work and are valuable for the formation of a fundamental understanding of objective psychological methods. Special courses are given both at undergraduate and professional levels under titles such as mental hygiene, mental adjustments, child guidance, psychological testing, abnormal psychology, psychopathology and clinical psychiatry. Textbook work in courses may be difficult to apply to practical experience without guided field-work practice. Increasing stress on mental hygiene is being placed in case work instruction and in the seminar on case work. Several prominent schools of social work use the psychoanalytic approach to mental hygiene, which must be regarded as unfortunate since objective psychology is much more in keeping with the scientific attitude of the social worker's other training in sociology and economics. Objective psychologists are to blame for the prevalence of psychoanalysis, however, for they have been slow in formulating theories and practices to meet the social worker's urgent practical needs.

MENTAL HYGIENE IN THE FAMILY

The Adjustments of Husband and Wife. The marriage relationship may have either a positive or a destructive influence on the mental health of the husband and wife. It involves many of the most important adjustments in human lives, but when successfully achieved it can become a constructive experience for mental health second to no other. To marriage each partner brings an equipment of motives, habits and preferred modes of satisfaction that have been acquired through previous experiences and training. These personalities are brought into an intimate and pervasive contact that has unusual possibilities for eliciting emotional responses. Some adjustment problems, such as those of school and business, can be relieved temporarily by evading or ignoring them, but the adjustments of mar-

riage are inescapable. For a successful outcome the personality traits of the partners in marriage must be harmonious, or else capable of being made so through the readiness of the individuals to make good adjustments.

The success or failure of a marriage is commonly ascribed to the good or bad character of the husband or wife, interpreted moralistically, or to unfortunate external circumstances. To the psychologist it is evident that the principal determiner of success is the quality of the adjustments that the couple make to each other. The degree to which persons can adjust satisfactorily to any situation in life depends largely on their emotional maturity. This is especially true of marriage. The home relationships of husband and wife have many elements in common with those experienced by a parent and a child. If a married person has either resentful or dependent attitudes toward his parents as a result of emotional maldevelopment, these may be readily transferred to the spouse because of the similarity in the situations. It is popularly recognized that both the quarrelsomeness and the overdependence often seen in marriage are childish. The origins of these defects may be clearly understood in the light of the psychological theories of the development of personality.

A person with a maldevelopment of self-assertive behavior, for example, cannot make the compromises in mastery that are needed in marriage. Such an egocentric individual always demands to be first and displays various forms of rage when the rights or needs of the other partner thwart his or her immediate desires. Much of the quarreling of married couples over issues of no intrinsic importance arises from maldevelopment of rage reactions which prevents a problem-solving attack on frustrations. Maldevelopments of fear are also significant, especially when they assume the form of a general attitude of inferiority. Persons with this attitude are oversensitive to criticism, and may react to it either by uncertainty and timidity or by the formation of various kinds of defense mechanisms. Perhaps most serious of all maldevelopments is that of the reactions to love and approval. Emotionally immature persons of this type

respond to the spouse as to a parent. They become psychologically dependent and show resentment and grief if not given the excessive protection and consideration that they received from their parents.

The symptoms of marital discord may be interpreted psychologically as inadequate adjustive responses to the frustration of motives. Family bullying is a common form of aggressive compensatory adjustment directed by the husband or wife toward the other. From unbearable marital situations, persons may seek relief in withdrawing and phantasy. Interests in business, sports, clubs and other outside activities often represent balancing factors that compensate for matrimonial maladjustment. While this form of defense is perhaps less destructive than open warfare, it causes a loss of some of the positive values of marriage. Hysterical reactions are very frequently employed as a defense against a hostile spouse or as a means of getting favorable attention that is otherwise denied. The ailing wife is often motivated by a need for tender consideration or by a desire to escape the monotonies of housekeeping. These motives are, of course, unrecognized by the wife herself, as is almost always true in cases of hysteria. This form of response is not limited to the female sex, but may also be used by husbands to gain consideration from their wives or to excuse their failures. Nervousness, anxiety and other persistent nonadjustive reactions are frequently precipitated by marital difficulties when no form of response can be discovered for reducing emotional tensions.

A prominent cause of trouble in the marriage adjustments of young people is interference by their parents. In some cases this is due to a long-established parental habit of running the affairs of their children. In other instances an excessive love-attachment has been established between parent and child, because of a need for emotional satisfaction on the part of the older person. Such parents cannot endure seeing themselves supplanted by a husband or wife as the main object of their children's love. This situation is rendered doubly unfortunate by the reciprocal attachment that has been created in the younger

person. When a young husband, for example, is psychologically dependent on his mother, constantly defers to her wishes and perhaps insists that she continue to live with him, a conflict is brought about that will eventually be intolerable to some or all of the three persons concerned. This situation is easier to prevent by proper adjustive guidance in childhood than it is to remedy. It can often be solved, however, by a clear recognition of the motives involved and by a planned course of readjustment.

The sexual adjustments of marriage present an important problem in mental hygiene. Studies of incompatible couples have found that a lack of agreement in sex desires or in degree of satisfaction is a very prominent underlying cause of general marital maladjustment. Because sex is such a highly valued and intimately personal function, failures in sex adjustment often lead to attitudes of inferiority and to needs for generally defensive activity. Sex excitement with inadequate satisfaction creates a state of unreduced tension basic to much nervousness and restless anxiety. The present taboos surrounding the subject of sex compel many young persons to face this adjustment with less preparation than for any other major life problem. Sexual knowledge and skill are not instinctive, and education is as much needed in this field as in any other. This may be provided by wise and well-adjusted parents or physicians. An intelligent knowledge of sex is not sufficient, however. Even more important are attitudes toward sex which may be distorted by conditioning or by the adoption of the points of view of maladjusted parents, and which remain unremedied because of the prevalence of repression in respect to sexual topics. Marriage itself may provide an opportunity for the readjustment of these attitudes, but the need for psychiatric assistance among married couples is great.

The positive mental hygiene of marriage is the same in its essentials as that of any other human undertaking. Each partner of the successful marriage recognizes the legitimate motives of the other and acts so as to fulfill rather than to frustrate them. Each preserves the freedom of the other from undue

interference of petty dictatorship as jealously as his or her own. The calm and objective discussion of domestic problems is utilized not only for the joint decision reached, but also as a form of expression valuable for mental hygiene. The constructive influence of marriage includes other factors than home life and sexual adjustment, although the importance of these primary satisfactions must not be minimized. The well-adjusted husband and wife provide a continuous psychotherapy for each other through the sympathetic consideration of their mutual and individual problems. This confidential relationship aids each partner to gain insight into his or her own conduct, to solve adjustive problems more objectively, and to feel the strength of a united effort against difficulties.

Parent and Child. The significance of the relationship between parent and child in the formation of the personality traits of the latter need not be emphasized again, for it has been a major theorem throughout the study of the psychology of adjustment. Parents determine the behavior of their children by both direct and indirect influences, the second being less well recognized but more important. Direct guidance and training include conditioning, instruction and the more obvious forms of reward and punishment. Indirectly, the parents form the personality of the child by suggestion and by subtle rewards and annoyances such as the giving or withholding of attention, the power of which is usually unappreciated. Children adopt many of the habits and adjustments of their parents, since from their point of view the conduct of these loved and omnipotent persons represents the approved course of action. In order to bring up a child whose potentialities for personal development are fully realized, parents must live good adjustments as well as teach them.

The enjoyment that even some well-intentioned parents try to obtain from having children is in many instances harmful to the mental hygiene of the youngsters. Children can be satisfying to the immediate parental motives of love, mastery and social approval in a manner destructive to their ultimate welfare. They can be caressed, overprotected or shown off only

at the expense of prohibiting the development of independent adjustive habits. A child upon whom excessive attention is showered at one time is likely also to be the one who is required to be "seen but not heard" on other occasions, according to the parents' personal convenience. The disintegrating alternation of overstimulation and repression that results from a selfish attitude of parents provides the predisposition for the child's future maladjustments. Some children reared in this manner succeed in painfully readjusting themselves later in life, but little credit is due to the parents for the accomplishment.

Having a child is sometimes suggested as a means of reuniting the interests of a husband and wife who are maladjusted toward each other. This may work in the intended manner in a few instances, but is not regarded by psychologists as a commendable procedure. The child whose parents are antagonistic is subjected to influences disruptive of good adjustment. It is common under these circumstances for one parent to seek from the child the love satisfaction that the marital relationship has not provided. This results in a love-attachment and dependence that hinder the child's development. The opposite effect may also occur, leading to a rejection of the child. An emotionally immature parent who has assumed a dependent and childlike relation with the other partner in marriage may react to the child as to an interloper or a competitor for love and attention. This attitude is not assumed deliberately and with insight, of course, but is the concealed basis for many deep antagonisms between parents and children. From a psychological point of view it is better for an incompatible couple to separate childless than to throw the burden of their adjustive difficulties on a new generation.

The legitimate satisfaction that parents may expect from guiding the development of a well-adjusted child is like that of a creative artist in his work, a satisfaction achieved from the perfection of the product itself without consideration for more immediate and personal motives. The child is provided with opportunities to grow and with situations requiring adjustment that are within his ability to solve successfully. He is given

freedom and left wholesomely alone for a sufficient proportion of his time. Parents guide the child to avoid some of the greatest mistakes, but do not protect him from all of the results of his trial and error, since he learns chiefly through his independent experiences. At the same time, the parents maintain a cordial and confidential relationship with the child that will cause him voluntarily to seek their counsel when he is in difficulties. The love bestowed on a child avoids the extremes of coldness that would cause insecurity and of selfish sentimentality that would lead to dependence and attachment. A child who is thoughtfully trained for his own sake will eventually be more satisfying to his parents than one whose early life is utilized for the temporary pleasure or convenience of his elders.

The education of parents is one of the most hopeful fields of activity of the mental hygiene movement. The general improvement of mental health requires both better-adjusted parents and better-informed ones. The first of these aims is the more difficult, but can be achieved gradually by self-direction and insight into the bases of conduct, and by the increased provision and use of clinical facilities for mental hygiene. The study of the psychological care of children in mothers' clubs, parent-teacher associations and similar organizations is remedying the informational defect to a considerable extent. There is some prospect that the next generation of intelligent young parents will make the same progress in mental hygiene that the present generation has made in physical care and nutrition.

MENTAL HYGIENE FOR ONE'S SELF

Knowledge and Self-Direction. Persons may legitimately demand of psychologists if there are not some principles of mental hygiene by which individuals may help themselves to attain fuller, happier, and better-adjusted lives. The answer is affirmative. In fact, there is no kind of improvement in behavior and adjustment except self-improvement. Clinicians, teachers and parents can only assist in the prevention or cure of adjustive difficulties; the real changes must be made by the

individual himself. It must be emphasized, however, that there is no royal road to the attainment of good adjustment or of desirable traits of personality. Any gain must rest on a well-formulated desire for improvement and on conscientious and continued effort. Advertised schemes for improving one's personality in ten easy lessons are sheer quackery, and are to be regarded as on a par with get-rich-quick enterprises which offer high returns for little investment.

One of the first steps in the improvement of adjustments is the understanding of one's own behavior. It is inconceivable that any person can study the psychological principles of adjustment with real comprehension and fail to gain some degree of greater insight into his own life. From the study of psychology the individual gets a clearer conception of his own motives, of their origins and of the ways in which they are satisfied. An examination of the varieties of adjustive behavior causes each person to detect minor inadequate mechanisms in his own conduct that were often unrecognized before. The study of the development of personality traits may reveal the sources of characteristics that the individual did not understand in himself. A knowledge of the methods of mental hygiene clinics can assure any maladjusted person that he can achieve a solution for his difficulties. It is especially important that all persons be informed of the existence of clinical facilities and persuaded of the importance of consulting them when they or their friends display symptoms of maladjustment.

One common pitfall inherent in the study of the psychology of adjustment must be avoided. A partial knowledge of psychology can serve as a means of self-deceit and self-justification, whereas a full comprehension should result in understanding. Unless sparingly used, the diagnostic terms of psychology can cover more than they reveal. One student protests his inability to achieve because of his "inferiority complex," which he seems to be cherishing proudly. Another points to the assertion that he is the product of his heredity and his environment and so asks how should he be expected to improve! Such statements must be recognized as forms of rationalization rather than

reasoning. They cannot be regarded as blameworthy, but merely indicate that in a smattering of psychology the individual has found a new means for justifying inferior types of adjustment. A more serious damage is sometimes done by persons inadequately trained in psychology who go about diagnosing and labeling the maladjustments of their acquaintances. This is, of course, a compensatory mechanism for asserting the person's own superiority, a form of showing off. One who has learned a really psychological attitude will keep his guesses at diagnosis to himself, and will try to help maladjusted individuals to make better responses. Considerable good may be accomplished by inviting a shy, seclusive person to a party and seeing that he has a good time; much harm may be done by summarily labeling him an "introvert." The cure for the errors that inadequate psychological knowledge may cause is not to abandon instruction in this subject, but is to teach more and better psychology.

It is sometimes believed that a study of one's own thought and behavior is morbid. This is not necessarily true. A morbid attitude is a nonadjustive one that leads to phantasy or anxiety. Mental hygiene for one's self should be positive rather than diagnostic. The hygienic consideration of one's own adjustments is a necessary first step, to be followed by a planned course of action. If self-examination is made the basis of a persistent effort to live according to principles of positive mental hygiene, each person can achieve a more satisfying and worthy existence.

Principles of Positive Mental Hygiene. To formulate the general principles of positive mental hygiene is an ambitious task, but not an impossible one. With our present degree of knowledge of human nature any such list must be tentative and approximate. Only when all of the causes of deviations of behavior are thoroughly understood will the principles of good adjustment take the form of incontrovertible laws. In spite of this objection, it is desirable for urgent practical purposes to make the best statement that present knowledge affords. At least, we are able to set forth some generalizations that are

better than none at all. It is difficult to state the conditions of good mental health; it is admittedly still more difficult to apply these concepts and to live according to them. The principles of positive mental hygiene, however, contain within themselves the germ of their own accomplishment, for following the simpler and easier ones makes it possible to achieve the others. Some of the more obvious and essential conditions of effective living may be outlined as follows:

1. *Maintenance of good physical health.* Mental and physical hygiene are inseparable, for behavior and adjustment involve the activity of the body as a whole. A visit to a physician is a good preliminary step to be made by a person seeking to improve his own adjustments. A few specific physical disabilities, such as endocrine gland disturbances, may affect behavior directly. Poor physical health removes the zest of living and lowers the general quality of adjustments. Annoying physical complaints are frequently the basis for worry and other nonadjustive reactions. When they are discovered, physical defects must be treated actively and objectively. As has been described before, it is easy to use illness or hysterical ailments to rationalize poor adjustments. This tendency may be counteracted by a positive emphasis on good health, and by an active attitude toward known defects.

2. *An objective attitude.* Objectivity is the habit of attacking problems directly and rationally, and of being guided by observed facts rather than primarily by desires. The person who is objective is able to interpret the forces of his environment without interference from emotional bias, and to manipulate them deliberately in order to gain a balanced satisfaction of his motives. He is able to see other people's points of view as well as his own, and hence can compromise and adjust more easily. Objectivity is most easily acquired in the gradual course of childhood training but, like any other habit, may be learned at a later age by well-motivated practice.

3. *Insight into one's own conduct.* The well-adjusted individual has an objective understanding of his own conduct as well as of external circumstances. He has learned his principal

forms of motive-satisfaction, not by blind trial and error, but with a perception of the relationships between his drives, the situations, and his responses. Insight is the opposite of self-deceit and rationalization. A person who understands the nature of his own behavior can be honest with himself and can frankly admit his errors and failures. He can accept and assimilate his shortcomings, and can try to balance them by socially acceptable compensations. He has less need to cover up or to defend his handicaps. Insight can be gained through a knowledge of the psychology of adjustment, or may result from an objective and deliberate attempt to understand the sources of one's own behavior.

4. *A confidential relationship with some other person.* One of the most appropriate means of tension reduction is talking about one's difficulties. This extinguishes nonadjustive emotional reactions, and assists the individual to obtain a more integrated view of his life problems. The maintenance of a personal relationship that permits the individual to discuss topics that are shameful or fear-provoking for him prevents repression, which is one of the most serious intensifying factors in all kinds of maladjustments. Every person needs another to whom he can confess his difficulties freely, but without becoming unduly dependent. This rôle is not limited to psychiatrists and psychologists, but may be exercised by parents, husbands and wives, physicians, teachers and friends.

5. *Attention to the present situation.*[1] All real adjustive problems require the adaptation of the individual's behavior to his present frustrations. Many inadequate adjustments, in contrast, are due to an excessive concern for the past or the future. The worrier shows anxiety for what is to come and regret or fear for what is past. For good adjustment, it is essential to live with each situation as it arises, and to attack it promptly with all of the adjustive resources available. This does not deny the value of learning by experience or of planning for the future. The healthful attitude relates the past and the future to the

[1] This principle and several of the others following are described by Burnham (1924), chap. 20.

present situation, while the nonadjustive tendency is to contemplate these periods for themselves, either in phantasy or anxiety.

6. *A sense of the ridiculous.* An excellent antidote to the apparent solemnity of some of the other principles of mental hygiene is the advice not to take one's self too seriously. The well-adjusted individual laughs at his own mistakes, and sees the ridiculous in his own conduct. This humor affords an emotional release, and tends to change the individual's mood from a fearful to an adjustive one. It is important, however, for each person to do his own laughing. Ridicule by parents or teachers is not hygienic, but may precipitate serious attitudes of resentment or inferiority.

7. *Planned activity.* One of the essential conditions for good adjustment is an active attack on problems. Adjustment is a process of trial and error, and the individual who will make vigorous attempts to overcome his frustrations has a greater chance of ultimate success. Activity overcomes inhibitions and prevents the formation of futile and nonadjustive attitudes. Good mental health demands that the individual do something when confronted with a difficulty. An active attitude may remove the cause of the thwarting or, even when it does not succeed entirely, may at least serve to reduce the emotional tensions engendered. Of course, mere random motor activity is not sufficient to maintain good adjustment. The activity principle must be correlated with the other conditions of mental hygiene, especially with objectivity and insight.

8. *Satisfying work.* Work can provide an irreplaceable positive influence for mental hygiene. Constructive work consists in the planning and completion of tasks that have a recognized social utility. This process is intrinsically satisfying to the strong motives of the individual, for it provides the highest type of fulfillment of the needs for mastery and social approval. The chief requirements for hygienic work are freedom and success. Each person must be free to select the kind of task that is most suitable and most satisfying to him. He must have freedom to plan it and to carry it to completion in his own way. The sense

of satisfaction and completeness that comes from the successful conclusion of work is one of the greatest integrating forces in human lives.

9. *Rest and recreation.* Work must be alternated with a proper proportion of rest and recreation. These relaxations have both direct values for good adjustment and also indirect values through their effect on physical well-being. Periods of rest or of a radical change in activity such as is provided by recreations allow nonadjustive reactions and undesirable emotional moods to die out through disuse. This permits the individual to attack his difficulties more vigorously on returning to them. Recreations and games also supply satisfactions for motives that act as balancing factors when success in other adjustments is temporarily impossible.

10. *Normal social participation.* Social activity in work or play is more healthful than individual activity. In a group, each person becomes forgetful of his own immediate needs and difficulties, while he finds satisfaction in joint achievements. Group participation makes phantasy and anxiety impossible, since the individual constantly directs his attention to the communications of the others and cannot withdraw to his own reveries. Social contacts also assist in attaining an objective attitude and in keeping active and alert to the present situation.

The most general principle of positive mental hygiene, which includes most of the others, is to *employ the scientific method for the solution of personal problems.* The same form of attack that serves to unravel the universal complexities of nature can be used to discover the best adjustments for individual difficulties. The first need is for data, for evidence concerning the problem. The individual considers his situation objectively and evaluates its importance. He talks of it with someone, both integrating his own conceptions and gaining another's advice and point of view. A second step is to formulate various hypotheses for the solution of the adjustive problem. The courses of action that are possible are considered, and the immediate and remote results of each of these are weighed. Finally, on a basis of these reasonable conclusions, the individual decides on a method of

adjustment and acts on it at once, vigorously and persistently. The test of the adjustive hypothesis is its individual satisfyingness and its social value. If it fails, another plan is tried, just as the scientist attempts another theory after one has been disproved.

The person who is able to secure a balanced satisfaction of his motives by carefully planned courses of action will achieve adjustment and effective living, which is good mental health.

SUGGESTED READINGS

The chapters of Groves and Blanchard, *Introduction to Mental Hygiene*, describe the applications of mental hygiene in many fields, including childhood, adolescence, marriage, schools, colleges, business, recreation, religion, literature, social work, public opinion, delinquency, and mental disease. The publications of the National Committee for Mental Hygiene include books and pamphlets on a wide variety of applications.

Mental Hygiene and Education. The applications of mental hygiene to education are covered by a very large number of books, of varied quality. The clearest and most practical description of positive mental hygiene for the classroom teacher is Symonds, *Mental Hygiene of the School Child.* Howard and Patry, *Mental Health*, gives methods for the study of maladjusted children, with many case studies made by teachers. Reavis, *Pupil Adjustment in Junior and Senior High Schools*, applies the case study method to personal and educational guidance. Other books of special interest to teachers include Sayles and Nudd, *The Problem Child in School*; Zachry, *Personality Adjustments of School Children*; and Averill, *The Hygiene of Instruction.* The visiting teacher as an agent for mental hygiene is described in Howard and Patry, *op. cit.*, chap. 16; and in Culbert, *The Visiting Teacher at Work.*

A school organized for the retraining of maladjusted children is described in Anderson, *Psychiatry in Education.* General books on mental hygiene that place an emphasis on the educational implications are: Sherman, *Mental Hygiene and Education*; Kirkpatrick, *Mental Hygiene for Effective Living*; and Morgan, *The Psychology of the Unadjusted School Child.*

No teacher should fail to read Burnham, *The Normal Mind*, which builds a philosophy of education on the requirements of mental hygiene. The contributions of progressive education to mental hygiene can be discovered from Rugg and Shumaker, *The Child-Centered School*; Tippett, *Curriculum Making in an Elementary School*; and Melvin, *The Technique of Progressive Teaching.*

The problems of the training of general traits of personality and character in schools, of the provisions for individual differences, and of pupil adjustment and discipline, are discussed in many texts in educational psychology, such as Trow, *Educational Psychology*; Jordan, *Educational Psychology*; Pressey,

Psychology and the New Education; and Gates, *Psychology for Students of Education.*

Mental Hygiene in Industry. The most valuable references on the needs and method of mental hygiene in business are Fisher and Hanna, *The Dissatisfied Worker*; and Anderson, *Psychiatry in Industry.* Culpin, *Recent Advances in the Study of the Psychoneuroses*, chaps. 7 and 8, reports studies of maladjustments in industry. A very different attack is that of Williams, *What's on the Worker's Mind*, and *Mainsprings of Men*, which throw considerable light on mental hygiene conditions in industry from the point of view of the worker.

Viteles, *Industrial Psychology*, is a good general reference on selection, training, fatigue and monotony in work, all of which are pertinent to mental hygiene, while his chapters 25 and 26 directly concern adjustment problems. Moore and Hartmann, *Readings in Industrial Psychology*, furnishes additional references on these topics. Hepner, *Human Relations in Changing Industry*, applies the concept of adjustment in a non-technical manner to many industrial problems.

Mental Hygiene and Social Work. Those unfamiliar with the field will be greatly enlightened by reading Dexter, *Social Adjustment.* Cannon and Klein, *Social Case Work*, is a general text in this subject that emphasizes the mental hygiene aspects of all case work. The rôle of the social worker in the clinical study and treatment of maladjusted persons is described in Lee and Kenworth, *Mental Hygiene and Social Work*; Healy and others, *Reconstructing Behavior in Youth*; and Stevenson and Smith, *Child Guidance Clinics.* Pratt, *Morale, the Mental Hygiene of Unemployment*, is a valuable little reference for those engaged in relief work.

Mental Hygiene in the Family. A study that indicates the psychological bases of marital difficulties is Hamilton, *A Research in Marriage*, also reported more popularly as Hamilton and Macgowan, *What Is Wrong With Marriage.* Mowrer, *Personality Adjustment and Domestic Discord*, describes a mental hygiene approach used in remedying home conflicts. Myerson, *The Nervous Housewife*, helps to understand many common disagreements and neuroses of the home.

There is no lack of books for parents on the training of children. Some of the best are Fisher and Gruenberg, *Our Children, A Handbook for Parents*; Mateer, *Just Normal Children*; Thom, *Everyday Problems of the Everyday Child*; and Sayles, *The Problem Child at Home.* A behaviorist's point of view is presented by Watson, *Psychological Care of Infant and Child.*

Equally good reading for parents of adolescents and for older adolescents themselves are Hollingworth, *The Psychology of the Adolescent*, and Williams, *Adolescence, Studies in Mental Hygiene.* These are also recommended for high-school teachers.

Mental Hygiene for One's Self. Many of the light and popular books on psychological topics that flood the markets today are utterly worthless. They present distorted theories and are of no practical value for self-help. One exception is the writings of Jastrow, such as *Piloting Your Life* and *Keeping Mentally Fit* which are readable and interesting, yet acceptable to psychologists.

A book intended for the mental hygiene guidance of college students is Morgan, *Keeping a Sound Mind.* Burnham, *The Normal Mind*, contains much that is valuable for self-help, especially in chapter 20. No sounder advice has yet been written than that of James in *Talks to Teachers on Psychology; and to Students on Some of Life's Ideals.* His chapter 8 on "Habit" is a classic, and the last three essays pertain to that often ignored factor in good adjustment, a philosophy of life.

QUESTIONS AND EXERCISES FOR THINKING AND DISCUSSION

QUESTIONS AND EXERCISES FOR THINKING AND DISCUSSION

CHAPTER I

Human Conduct and Scientific Method

1. What are some of the typical adjustments that college students have to achieve?

2. In the case of some one adjustment problem, clearly state: (*a*) the human need that underlies it; (*b*) the circumstances that prevent a direct fulfillment of this need; (*c*) the way in which the difficulty is overcome or avoided, resulting in the satisfaction of the need.

3. Analyze the attitude of your group toward an eccentric or maladjusted individual. In what ways do modern young people express the equivalent of a "moralistic" attitude? Is this scientific? Is it helpful?

4. Cite instances of the futility of scolding or shaming a maladjusted person into good adjustment. Do these procedures ever succeed?

5. If everyone had an "objective" point of view toward conduct, placing no blame, would standards of behavior be improved or weakened? Why?

6. What are some similarities and differences between the viewpoint of the practitioner who seeks to cure a maladjustment, and that of the scientist who tries to understand its origin?

7. Can the steps of scientific method be applied to a personal problem as well as to a general one? Formulate some personal problem and try to answer it, following the scientific method.

8. What is meant by *control* in a scientific experiment?

9. In what respects is the method of *case study* inferior to the methods of *experiment* or *measurement*?

10. Formulate some other problems in the psychology of adjustment that can be attacked by each of the three methods of research described.

11. Why do some persons object to the general study of adjustment problems by laymen? How can this objection be rendered invalid?

12. Vocabulary exercise. Can you give the precise meaning of each of these terms? Adjustment; Physiological need; Moralistic; Objective; Scientific method; Hypothesis; Experiment; Control; Test; Reliability; Validity; Hypothetical concept; Psychoanalysis; Behaviorism; Psychiatrist.

CHAPTER II

The Origins of Behavior

1. What difference does it make whether a certain form of behavior is native or acquired?

2. To what extent is the *instinct theory* accepted naïvely by persons without psychological training? Question a few such persons.

3. List several so-called "instincts" that are in reality non-existent. List several that exist, but that may be shown to be learned.

4. Following the same attack as that made by the text on the alleged instincts of "acquisitiveness" and "gregariousness," show how the so-called instinct of "habitation" (the desire for a home) may be explained as learned behavior.

5. Why is a pure reflex an abstraction, rarely or never occurring in actual life conditions?

6. Why is mass reaction regarded as more important for learning than are reflexes?

7. On what stage of life did the instinct theory base its conclusions? the reflex theory? the embryological theory?

8. The fact that the very form of the nervous system is affected by stimulating influences has what effect on the theory of the existence of any entirely native reactions?

9. As an exercise, describe how the knee-jerk reflex might be prenatally acquired. Start with the fact that the knee may strike against another part of the fetus or against the inside of the uterus as part of a mass reaction.

10. What concept of emotion does popular usage most nearly resemble? Criticize this from an objective psychological point of view.

11. What does the limited number of situations provoking fear in infants prove about many adult fears?

12. Does the physiological approach justify a theory of many emotions, of two emotions, or of one only? Why?

13. Enumerate some situations in which you have recently felt strong emotion. Was any overstimulation directly present at the time? Was the situation one associated with overstimulation of some kind in your past experience?

14. From your own experience, give examples of emotional *shock*, *diffusion* and *transference*, in some recent emotional episode.

15. Vocabulary exercise. You should know the meanings of: Native; Acquired; Instinct; Reflex; Mass reaction; Embryo; Fetus; Axis; Physiological gradient; Neuroblast; Neurone; Axone; Dendrite; Stimulogenous fibrillation; Neurobiotaxis; Reflex-circle; Visceral; Emergency theory; Autonomic system; Thalamus; Shock; Diffusion; Mood; Transference.

CHAPTER III

The Modification of Behavior

1. To what extent does popular opinion recognize that traits of character and personality are learned? Criticize the common opinions from the point of view of psychology.

2. Observe the behavior of a young infant when attracted by a bright object. Can you distinguish mass reaction? The emergence of a more specific response, after practice?

3. Of what value are the elaborate precautions and careful controls used in the conditioned reaction experiments?

4. Analyze several of your own habits in terms of the conditioned reaction.

5. Can you obtain instances of conditioned fears in children or adults? Formulate a program for removing such a fear.

6. What light does the conditioned reaction shed on so-called "unconscious" action?

7. Which do you think more valuable and more scientific, the hypothesis of the conditioned reaction or that of an active "unconscious mind"? Why?

8. Describe three methods, based on the three principal means of getting rid of conditioned reactions, for overcoming a child's aversion to some person.

9. Give several illustrations of inhibition from your own conduct. Are inhibitions learned in the same general manner as positive forms of response?

10. Is it harmful to "have inhibitions"? Is this term often incorrectly used by persons who have a smattering of psychology?

11. Enumerate other examples of the breakdown of inhibitions, similar to those described in the text. Under what conditions do these occur?

12. Show how inhibition and differentiation, in the technical senses, occur in (*a*) driving an automobile; (*b*) reviewing for a final examination; (*c*) entertaining a group at a social party.

13. Analyze some instances of remembering, trying to detect the present cues or symbols that aroused the recall.

14. Write a description of one or of several dreams. An aid to dream recall is to jot down notes immediately after awaking. Explain a dream, noting the effect of present problems or of physiological conditions, and the symbols suggested by events in your experience.

15. Give an example of an irrational or excessive emotional reaction that may have been due to the operation of a symbolic process, and try to explain it.

16. Vocabulary exercise. These are terms that you should understand clearly: Conditioned reaction; Voluntary action; Reinforcement (of conditioned reaction); Experimental extinction; Delayed reaction; Trace reaction; Inhibition; Inhibition of an inhibition; Irradiation; Differentiation; Spread of inhibition; Symbol; Redintegration; Cue; Association.

CHAPTER IV

Motivation

1. What do you want? Write a list of your objectives or desires, including those of which immediate attainment is possible, and those which are more remote life purposes.

2. Is it popularly recognized that all behavior has some motive behind it? What motives may underlie queer, eccentric or overaggressive behavior?

3. Why does the instinct theory offer no real explanation of motivation?

4. In what ways does the psychoanalytic conception of two opposed motivating forces resemble popular beliefs? Theological conceptions?

5. What are some stimuli that are clearly motives? Name some stimuli that do not fulfill the qualifications of being motives. What are some essential differences between these two types of stimuli?

6. Clearly distinguish between *drive*, *mechanism* and *motive*, giving examples of each.

7. Have you ever felt a general restlessness, the cause of which was not clearly recognized at first, but which afterward appeared to be due to hunger? Analyze this experience in psychological terms.

8. Make as complete a list as you can of the internal stimuli that may operate as drives.

9. Give several illustrations of the adient type of response in the behavior of animals or of children.

10. Describe the two ways in which drives are modified to become motives. Illustrate the extension of the stimulus, and the modification of the response.

11. Why are the subsistence motives not especially important in the study of the psychology of adjustment?

12. Analyze the objectives or desires that you stated in answer to question 1, in terms of fundamental motives such as social approval, mastery, conformity, security and sex. Are these the things that you really want?

13. Are most persons clearly aware that they are motivated chiefly by social approval, mastery, etc? Is it true that they are motivated by these patterns, even though they do not recognize it? What light do these questions shed on so-called "unconscious motives"?

14. From your own experience, describe some habit that illustrates the statement "the mechanism furnishes its own drive."

15. Describe how motives may be organized into a system of sentiment toward one's family; toward a political party with which you disagree; toward your college.

16. Is the *sentiment of self-regard* native or acquired? How does it develop?

17. Vocabulary exercise. Check your knowledge of these terms: Motive; Stimulus; Tension; Appetitive tension; Emotional tension; Drive; Mechanism; Tension reduction; Physiological drive; Tissue injury; Overstimulation; Adient; Avoidant; Mastery; Social Approval; Conformity; Sex; Sentiment; Self-regard; Purpose.

CHAPTER V

Adjustment

1. Why do studies of the adjustments of lower animals yield valuable information that can be applied to human adjustments?

2. Are all adjustments adaptive? Are eccentric or unreal forms of response ever adjustive?

3. Why was it necessary to make a thorough study of motivation before attacking the problem of adjustment?

4. Illustrate from your own experience, adjustment problems that were precipitated by *environmental obstacles*, by *personal defects*, or by *conflict of motives*.

5. Why must behavior be varied rather than inflexible in order to secure effective adjustment?

6. What are the characteristics of persistent nonadjustive reactions? What previously studied effects of emotion tend to cause persistent nonadjustive reactions?

7. What constitutes the solution of an adjustment problem? To what

extent is the psychologist concerned as to whether it is a good or a bad solution?

8. What are some obvious examples in your own experience of learning by trial, error and success?

9. Compare the "Law of Effect" and the "Principle of Closure" as descriptions of trial and error learning. What are the similarities of these two approaches? What are the differences?

10. Give examples of learning situations in which a painful act rather than a pleasant one has been learned. How can this be explained?

11. Show how the concept of *blind trial and error learning* is an alternative to the hypothesis of the "unconscious mind." Which theory is more desirable from the point of view of scientific method? Why?

12. What is the value of the concept of *insight* as used in the *Gestalt* theory and by clinical psychologists?

13. Enumerate a considerable number of different ways in which an individual may adjust to some difficulty.

14. What are the distinctions between a scientific issue and an ethical issue?

15. Vocabulary exercise. Are you thoroughly familiar with the technical meanings of these words? Thwarting; Environmental obstacle; Personal defect; Conflict of motives; Varied response; Persistent nonadjustive reaction; Trial and error; Satisfaction; Annoyance; Closure; Insight; *Gestalt*; Figure and ground; Telescoping; Blind trial and error; Ethical; Integration.

Chapter VI

Adjustment by Defense

1. What is meant by an *adjustment mechanism*? What are some mechanisms that you employ?

2. Name three suggested ways for classifying adjustments. What are some difficulties involved in classifying?

3. Describe some child or adult that you know who shows behavior similar to that of James G. Can it be explained in the same way?

4. Why is the term "attitude of inferiority" preferable to the term "inferiority complex" which is sometimes similarly used? Is there any need for the latter term?

5. Do most persons show in some degree the symptoms of an attitude of inferiority that are described? What is the difference between such persons and those that are really severely maladjusted?

6. Do all persons who have physical defects develop an attitude of inferiority? Why or why not?

7. Do feeble-minded persons usually have an attitude of inferiority? How is it possible for a person of normal intelligence to act as though he were defending himself against a belief in his own mental inferiority?

8. Is it easier to detect defense mechanisms in the *varied response stage* or in the *fixed response stage*? In which stage can they be more easily remedied?

9. Give some examples of direct and transferred compensations that are common in the behavior of normal people or of those who are only mildly maladjusted.

10. Are compensations always undesirable? Under what circumstances might they even be encouraged?

11. Distinguish carefully between compensation and primary egocentrism. In what way are these related?

12. Give some examples of attention-getting mechanisms shown by children or adults of your acquaintance. What is the most psychological way to remove these habits? What concept studied in connection with the conditioned reflex explains how to do away with attention-getting habits in children?

13. Discover in the newspapers some instances of crime which might be understood in terms of defense mechanisms.

14. Why do most people attempt to conceal their real motives by means of rationalizations? Would it be possible to admit the strong human motives frankly?

15. In what ways do we teach or compel children to rationalize? How can this be avoided?

16. What is the distinction between "good" reasons and "real" reasons?

17. Cite some illustrations of common beliefs, in addition to those given in the text, that are rationalizations. Trace the causes of some of these beliefs.

18. Vocabulary exercise. You should be able to employ these terms with precise and correct meaning: Adjustment mechanism; Defense mechanism; Inferiority attitude; Compensation; Direct and transferred compensations; Peculiar abilities; Identification; Egocentrism; Attention-getting mechanism; Rationalization; Sour grapes; Projection; Delusion.

CHAPTER VII

Adjustment by Withdrawing

1. Why do withdrawing types of defense often go undiscovered?

2. Explain Wickman's findings (Table I). Why do teachers and clinical workers differ in their evaluation of maladjustments?

3. Trace the origin of seclusive and timid behavior in some persons known to you. How does this compare with the account given in the text?

4. What explanation can you give of persons who were thought to be stupid when in school, but who became eminent adults? Will any large number of "stupid" pupils turn out this way? Why?

5. In what ways does dementia praecox resemble a simple withdrawing adjustment? What are some differences? When should a psychiatrist be consulted in such cases?

6. What forms of negativism are more commonly seen in young children? What forms are more characteristic of adolescents?

7. What may be done to prevent or remedy negativistic behavior in children?

8. Answer the questions implied in Table II, noting if you have ever, frequently, or recently had daydreams of the types described. Compare your results with the averages given in the text.

9. Classify some of your daydreams as to the *motives* of which they represent the fulfillment. Do the studies of daydreams verify the text's analysis of what are the most common human motives?

10. What can you do to help a person who daydreams excessively?

11. How can a daydream be unpleasant, yet satisfying to the individual's motives?

12. Give an illustration of retrogression in the behavior of a child; in that of a college student.

13. Vocabulary exercise. You should be thoroughly familiar with these terms: Seclusiveness; Feeble-mindedness; Pseudo-feeble-mindedness; Dementia praecox; Negativism; Phantasy; "Conquering hero"; Display phantasy; Saving phantasy; Phantasy of grandeur; Phantasy of homage; Martyr phantasy; Casual phantasy; Systematic phantasy; Retrogression; "Old Oaken Bucket" delusion.

Chapter VIII

Fear and Repression in Adjustment

1. Make an inventory of situations in which you have felt fear in recent years. In what instances were adequate stimuli present, similar to those described in the text? In what instances were the stimuli apparently inadequate ones?

2. Does fear have any value in human affairs? Should children be taught to fear anything?

3. Describe a case of phobia in someone you know. (This condition, in mild degrees, is quite common.)

4. Cite an instance in which you have forgotten a name that should have been remembered. Try to trace the causes of this failure of recall.

5. Why is it necessary to secure more reliable evidence on selective forgetting than that which is supplied by the case study approach?

6. Recall some events from your childhood. Do pleasant ones predominate? How do you account for the fact that you can remember *some* unpleasant experiences?

7. What shows that "repressed" memories are inhibited rather than extinguished?

8. Does the repression of unpleasant experiences make life happier? more efficient? Make up arguments for both sides of these questions.

9. Among your acquaintances, can you note some persons who have little tendency to repress; others who have a considerable tendency to do so? What are some possible causes of these differences?

10. Explain how repression hinders the process of experimental extinction.

11. Using diagrams of conditioned responses, show how symbolic phobias originate.

12. What relationships exist between phobias or compulsions and common superstitions?

13. Why are sexual responses more subject to repression than most other kinds? What would remedy this?

14. Vocabulary exercise: Fear; Phobia; Repression; "Unconscious"; Selective forgetting; Extinction; Inhibition; Symbolic phobia; Compulsion.

Chapter IX

Adjustment by Ailments

1. Why is it dangerous for amateur psychologists to attempt to diagnose and treat ailment-adjustments? In making applications of the material in this chapter what attitude should be taken and what precautions should be observed?

2. Describe a number of instances in which physical incapacity is used to excuse an individual from something that he does not want to do.

3. A professor once noted that when he forbade "making up" quizzes missed because of illness, the amount of illness on quiz days suddenly decreased. Explain this in psychological terms.

4. What is the relationship between hysteria and malingering? What light does the concept of "blind trial and error learning" throw on this problem?

5. Show how each of the factors described as contributing to the development of hysteria causes the individual to learn this form of adjustment.

6. Why is "rendering the symptoms ineffective" an inadequate method for treating hysterical disorders?

7. From newspapers or other sources, cite some examples of alleged miraculous cures. How does the concept of hysteria assist in understanding these?

8. What evidence points to the fact that occupational cramps are usually psychoneurotic disorders rather than physical ones?

9. Observe an individual who stutters. What sounds cause the greatest difficulty? Are these the same in all cases?

10. Many cases of stuttering are "outgrown." Explain this on the basis of the psychological point of view offered by the text.

11. Suggest methods for assisting a child who stutters or stammers.

12. Vocabulary exercise: Psychoneurosis; Psychasthenia; Hysteria; Conversion hysteria; Motor psychoneurosis; Suggestion; Anaesthesia; Contracture; Hysterical seizure; Fugue; Somnambulism; Multiple Personality; Malingering; Consistency reaction; Occupational psychoneurosis; Cramp; Stammering; Stuttering.

Chapter X

Persistent Nonadjustive Reactions

1. What is meant by a baffling difficulty? Give some examples of such difficulties in human adjustments.

2. From your own experience, illustrate the three principal symptoms of a nonadjustive response.

3. What is the physical basis of a generalized nonadjustive ailment? What is the relationship between the psychological and physiological aspects?

4. Of what value is the neurasthenic reaction to the person who displays it?

5. What similarities are likely to be found in the backgrounds of hysterics and neurasthenics? What differences?

6. From a logical point of view, justify the finding that persons who develop neurasthenia are of a higher average intelligence than are those who develop hysterical mechanisms.

7. What are some situations to which adolescents are likely to react nonadjustively? What are some ways to prevent this reaction?

8. How does repression predispose an individual to worry or anxiety?

9. Apply the suggestions for the relief of worry to a problem of your own, or to that of a friend. What favorable results are achieved?

10. What is the popular belief concerning the origin of nervousness? State three facts concerning nervousness that contribute to this misconception.

11. What is the justification for regarding nervousness as usually a psychological problem rather than a medical one?

12. Discover some instances of "nervous breakdown" among persons of your acquaintance. Try to determine the objective facts concerning them. Just how did the person with "breakdown" behave? What seemed to be the causes?

13. Why do psychologists consider that "overwork" is a less frequent cause of "nervous breakdowns" than is commonly supposed?

14. What does the term "constitutional" imply? How is it often erroneously used?

15. Formulate arguments for and against the use of diagnostic terms in describing maladjustments.

16. Vocabulary exercise: Nonadjustive; Neurasthenia; Hypochondria; Anxiety; Worry; *Folie de doute*; Circular reaction; Balancing factors; Nervous disease (correct usage); "Nervousness" (popular usage); Tic; Cerebral depressant; "Nervous breakdown"; "Constitutional inferior"; "Psychopathic personality."

Chapter XI

Personality Traits and Their Measurement

1. Give examples of various adjustments to the same objective situation, made by different people. What determines the ways in which people adjust?

2. In several of the cases cited in the text (James G., chap. 6; Mariana F., chap. 7, etc.) distinguish some of the predisposing factors; some of the precipitating factors.

3. How does personality depend on the existence of individual differences? What are the two basic problems concerning all individual differences?

4. What are some reasons that explain the human tendency to divide people into types?

5. Do you think that you are an "extravert" or an "introvert"? Describe the difficulties that arise in making this decision.

6. What is the difference between a personality type and a personality trait?

7. State the three principal methods used to evaluate characteristics of personality. How are these methods commonly used in judging an applicant for a position, for example?

8. Name some situations in which flexibility of questioning would be desirable. Name some situations in which uniformity of questioning would be necessary.

9. What are some of the principal advantages of the personality questionnaire? What are some of its shortcomings?

10. How may a questionnaire yield useful information, even if a few questions are not answered truthfully?

11. Name and describe four methods by which questionnaires have been validated.

12. What are the differences between ordinary observation and the method of directed observation described in the text?

13. What is the relationship between "intelligence" and "personality"?

14. Enumerate a number of typical characteristics of maladjusted persons that have been discovered by objective testing methods. Show how these general traits are manifested in some of the case studies given in chapters 6–10.

15. Answer and score the Personality Questionnaires given at the end of the chapter. How do you stand in these traits? How does the measured result compare with your previous estimate of your status in these traits?

16. Vocabulary exercise: Personality; Predisposing factor; Precipitating factor; Personality type; Sanguine; Choleric; Melancholic; Phlegmatic; Rationalist; Empiricist; Autistic; Schizoid; Cyclothymic; Extravert; Introvert; Ambivert; Personality trait; Continuum; Questionnaire; Association test; Intelligence test; Performance test; M.A.; I.Q.; Developmental Age; Scatter; Fluctuation of I.Q.; Speed pressure.

17. Names. With what theory, technique or test is each of these names connected? Allport; Bernreuter; Doll; Downey; Flanagan; Furfey; Haggerty; Heidbreder; James; Jung; Kuhlmann; Laird; Olson; Plant; Porteus; Pressey; Rorschach; Rosanoff; Terman; Thurstone; Willoughby; Woodworth.

CHAPTER XII

Organic Factors in Personality

1. What is meant by *primary* and *secondary* effects of organic states on behavior? Give examples.

2. What is an endocrine gland? How can a gland be both a duct gland and an endocrine?

3. Have you ever observed a person whose appearance suggests thyroid shortage, as described in the text? A person with an overactive thyroid? What behavior characteristics do such persons show?

4. Make a table of the endocrine glands, giving name, location, name of hormone or hormones, known or suspected functions, and associated disorders.

5. Why is it easy to confuse glandular disorders with behavior disorders of adjustive origin? Give some examples.

6. Does the cure of a disorder by the administration of an endocrine extract prove that the cause was glandular? Explain your answer.

7. How can drug or alcoholic addiction be a result of maladjustment rather than the cause?

8. Describe individuals among your acquaintances who seem to verify Kretschmer's theory of the relationship between temperament and bodily

type. Note some persons who seem to contradict this theory. Is it easier to remember the cases that fit a theory than those which do not?

9. Question some person not scientifically trained as to his views on heredity? What fallacies are expressed? How do these views compare with scientific findings?

10. Name a number of relatively fixed and a number of relatively plastic human traits.

11. Why can the family history method of research in heredity, valuable with plants or lower animals, not be used with respect to human behavior traits?

12. Tabulate the results of the three reliable methods for investigating heredity, as described in the text. What does each of these methods find concerning physical characteristics; intelligence; personality traits? Do the results obtained by various methods agree?

13. How is heredity used as "a rationalization of ignorance or incompetence"? What attitude is necessary to prevent this?

14. Vocabulary exercise. Chemical integration; Endocrine gland; Hormone; Thyroid; Parathyroid; Adrenal: Gonad; Pineal; Thymus; Thyroxin; Metabolism; Catalyst; Cretinism; Myxedema; Adrenal medulla; Adrenal cortex; Adrenalin; Cortin; Addison's disease; Acromegaly; Frohlich's disease; Psychosis; Paresis; Habitus; Pyknic; Asthenic; Heredity; Chromosome; Gene; Fixed trait; Plastic trait; Constancy; Coefficient of correlation; Fraternal twins; Identical twins.

Chapter XIII

The Development of Personality Traits

1. Illustrate the need for *opportunity*, *guidance* and *success* in establishing a school habit; in the development of a personality trait.

2. Why is childhood the most important period of life for the formation of traits of personality?

3. Outline some procedures for teaching a young child how to make a problem-solving attack on difficulties.

4. Is it desirable that children be made afraid of some things? Why, or why not?

5. What is a common origin of fear of authority? What are some maladjustments that may result from it?

6. In terms of the adjustment process, explain why a parent may want to fondle a child excessively; why a child may seek an undue amount of love stimulation.

7. Re-examine a number of the cases of maladjustment cited in Part II, noting in each case what variety of maldevelopment is present.

8. What is the relationship between the maldevelopment of love responses and the maldevelopment of rage and fear?

9. Do variations in integration exist among normal people? Describe instances of behavior that show a lack of integration or of sagacity.

10. How many of the typical experiences leading to a lack of integration can you discover in the case studies given throughout the book?

11. Devise a practical method for performing an experiment concerning "experimental neurosis" with adult human subjects.

12. Review the concepts of the conditioned reaction, given in Chapter III, and relate them to the material on experimental studies of integration.

13. Examine a number of case studies, especially those of Ronald B. (chap. 9) and Helen T. (chap. 10), to note how too much strain was imposed on discriminative functions. What are the results?

14. Vocabulary exercise. Development; Maldevelopment; Developmental defect; Problem-solving attitude; Parent-attachment; Emotional consistency; Auto-erotic; Homosexual; Fetichism; Integration; Sagacity; Experimental neurosis; Discrimination; Inhibition.

Chapter XIV

Psychoanalysis

1. Compare the objective psychological theories of *motivation* with the psychoanalytic concept of "libido."

2. What are the differences between the behaviorist's conception of "love or sex," and the psychoanalyst's concept of "sex"? What are some similarities?

3. What explanation does objective psychology propose as an alternative to the hypothesis of "the unconscious"?

4. In objective psychology, what corresponds to the "Ego," "Super-ego" and "Id"? Are these regarded as entities by the objective approach?

5. Compare the Freudian account of personality development with that given in Chapter XIII. What similarities and differences can be discovered?

6. What conception of "libido" is implied by the description of normal and abnormal development? Contrast this with the objective account.

7. In what way do "dynamisms" resemble the psychological "mechanisms"? What are the essential differences between these two concepts?

8. Compare the psychological description of repression (chap. 8) with the psychoanalytical theory.

9. Make a comparison between the psychological explanation of dreams (chap. 3) and the psychoanalytical explanation.

10. What are the chief similarities and differences among the viewpoints of Freud, Adler and Jung? Which is most nearly related to objective psychology?

11. Enumerate the various contributions of psychoanalysis to psychology.

12. Why does the cure of a psychological disorder offer no proof of the theory on which the cure is based? Apply this to psychoanalysis; to "faith healing"; to the use of quack medicines.

13. What specific criticisms of the psychoanalytic theory are offered by the text? Explain each of these.

14. Read some cases with psychoanalytical interpretations from the books in the "Suggested Readings," or from the periodicals, *The Psychoanalytic Review* and the *British Journal of Medical Psychology*. Are the explanations plausible? Criticize them from the objective psychological point of view.

15. Vocabulary exercise. Check your knowledge of the terms given in the

"Brief Glossary of Psychoanalytic Terms" at the end of the chapter. Take especial care to distinguish the psychological and psychoanalytic meanings of some words used by both approaches.

CHAPTER XV

The Mental Hygiene Study of the Individual

1. What is mental hygiene? How do its two aims overlap?
2. What aspects of mental hygiene can be practiced by every person? What aspects of mental hygiene can be practiced only by persons with professional training?
3. What are the best qualifications for the professional practice of mental hygiene? What are some shortcomings of the psychologist as a practitioner? of the general physician? of the general psychiatrist?
4. Name some of the advantages of the mental hygiene clinic, as compared to the individual practitioner.
5. Enumerate the personnel of the usual mental hygiene clinic, and state the duties of each person.
6. What kinds of problems are usually accepted for full study by a mental hygiene clinic? What are some problems that are usually referred to other agencies or given only brief advisory service?
7. How is the method of the case history illustrated by cases given in Part II? Check some cases against the "case history outline," noting what information is given and what is omitted.
8. Using the "case history outline" as a guide, write a case study of a child or adolescent who presents a conduct problem.
9. What observations made in the physical examination are especially valuable in studying an individual's adjustments? How can the physical examination contribute to the study of personality?
10. State the purposes of the various procedures usually employed in the psychological examination.
11. What is the value of a *psychograph*? Interpret the psychographs given in the text.
12. How may the psychological examination yield valuable results, other than in terms of numerical scores?
13. What is meant by *resistances* in the interview? What are some causes of resistances? How can they be overcome?
14. Make a list of the desirable characteristics of an interview, as described in the text. Interview some person, attempting to apply the procedures and precautions listed.
15. Compare the psychological and psychoanalytic conceptions of the modified interview techniques, such as free association, dream study, phantasy, and play observation. Why can the objective psychologist consider it defensible to use these psychoanalytic methods?
16. Vocabulary exercise. Mental hygiene; Clinic; Orthopsychiatry; Indirect examination; Direct examination; Case history; Psychograph; Interview; Diagnostic; Remedial; Resistance; Rapport.

CHAPTER XVI

The Guidance of Readjustment

1. Compare the sequence of procedures in mental hygiene treatment to the steps of the scientific method. How is each step illustrated in the treatment?

2. Give examples of the treatment of behavior problems by parents or teachers that err by attempting to attack the symptoms only. What should be done instead?

3. Analyze a behavior problem, either one known to you or one from the book, by the *situation-response* method, the *motive-satisfaction* method and the *asset-liability* method. Tabulate your findings in writing.

4. In what ways does a psychological diagnosis differ from a medical diagnosis? What are the relative values of diagnostic terms in these two fields?

5. What are the two fundamental tasks in treatment? Which is easier to achieve? Which is more fundamental?

6. Explain, in psychological terms, the values of the expressive methods of psychotherapy. Why does catharsis accomplish results?

7. Why is an explanation of his troubles to the patient useful only after a certain amount of expressive therapy has been employed?

8. Why should experimental rather than clinical evidence be made the basis of a theory concerning behavior adjustments?

9. What are some shortcomings of direct advice as a method of psychotherapy? When can this method be used?

10. Conduct a therapeutic interview with a friend who has some small problem of adjustment, such as worry. Use the methods of expression, assimilation and suggestion. What can you learn about guiding and influencing people from this experience?

11. What are the important differences between the re-education of a conduct problem and the educational process as applied to school learning?

12. Explain how psychotherapy re-educates a person's motives, thwartings, trial and error, and solutions.

13. What is the distinction between psychotherapy and environmental therapy? Why must both be used?

14. Outline a suitable course of environmental therapy for a college freshman who is timid and homesick.

15. What is the difference between "asset qualities" and "prestige qualities"? In what kinds of problems will the cultivation of each of these be valuable?

16. What resources does your community have that may be used to assist maladjusted persons?

17. Why can a clinician not deal with most parents as objectively oriented collaborators in problems involving their own children? What has to be done?

18. What is the psychological value of resorts, vacations and camps?

19. When is the placement of a child in a foster home indicated? How should the foster home be selected?

20. Why is it difficult to evaluate the success of the methods of treatment used for behavior problems?

21. What are some of the common reasons for the failure of psychological treatments?

22. Vocabulary exercise. Multiple causation; Situation-response; Motive-satisfaction; Asset-liability; Diagnosis; Psychotherapy; Expressive therapy; Clinician; Catharsis; Release therapy; Assimilation; Desensitization; Suggestion; Re-education; Asset qualities; Prestige qualities; Placement.

Chapter XVII

Applications of Positive Mental Hygiene

1. Why does it require more than good intentions and common sense to promote good mental health?

2. Cite some principles of mental hygiene that agree with the traditional conception of the good life. Cite some that disagree with tradition.

3. What part should parents and teachers play in a mental hygiene program?

4. Explain why the aims of mental hygiene and of education should be the same.

5. In what ways may the school be a cause of maladjustments among its pupils?

6. What are some causes of the failure of school pupils to learn? With what type of cause is the psychology of adjustment especially concerned?

7. Suggest methods to be incorporated in the teaching of a school subject, such as English, History, Biology or Algebra, that would make a positive contribution to the mental health of the pupil.

8. Read one of the references concerning the "progressive" or "child-centered" elementary school, and, if possible, visit such a school. Interpret the aims of this form of education in terms of mental hygiene.

9. How do school provisions for individual differences in ability assist in a mental hygiene program?

10. Describe a school "discipline" problem from your own experience. Why is punishment an inadequate solution? What should be done, from the point of view of mental hygiene?

11. What are some common causes of maladjustment among teachers? What can be done to remedy these difficulties?

12. Outline a program for training teachers in mental hygiene theory and practice.

13. What are three major causes of the dissatisfaction of workers in industry?

14. How should a department of mental hygiene in an industry be organized?

15. Prepare an outline of a talk on mental hygiene to be given to executives or foremen in industry. Keep in mind the needs, previous training, and preconceptions of this audience.

16. Why is mental hygiene more significant in social work than in almost any other profession?

17. How has psychology influenced social work? How has social work contributed to the psychology of adjustment?

18. What opportunities does the social worker have to practice psychotherapy? What training should the worker have for this task?

19. Describe some poorly adjusted married couple of your acquaintance. How can you interpret their difficulties in terms of objective psychology?

20. What light does the psychology of adjustment throw on the problems of separation and divorce?

21. What is meant by the "mutual psychotherapy" of the well-adjusted husband and wife?

22. How can parents rear their children according to principles of mental hygiene, and yet love and enjoy them?

23. Suggest some topics for talks or discussions on mental hygiene before a group of average parents.

24. What attitude should the student of psychology assume toward his own adjustive problems?

25. What should be the attitude and course of action of the student toward the adjustive difficulties of other persons? What should be done? What should be avoided?

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